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Ontario. Lands and Forests, Dep. r

# REPORT

1918/19 - 1920/21

OF THE

## Minister of Lands, Forests and Mines

OF THE

PROVINCE OF ONTARIO

For the Year Ending 31st October

1919

3 vol. in 1.

PRINTED BY ORDER OF  
THE LEGISLATIVE ASSEMBLY OF ONTARIO



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# CONTENTS.

## APPENDICES:

	PAGE
No. 1. Statement of Officers and Clerks in the Department .....	18
2. List of Crown Lands Agents and Homestead Inspectors .....	21
3. Statement of Lands Sold and Leased and Collections .....	24
4.       "       Gross Revenue .....	25
5.       "       Receipts Considered as Special Funds .....	26
6.       "       Gross Disbursements .....	27
7.       "       Expenditure on Account of Various Services .....	37
8.       "       Patents, etc., issued .....	37
9.       "       Timber Cut and Amounts Accruing for Dues, etc. ....	38
10.       "       Revenue from Woods and Forests .....	40
11.       "       Work Done in Military Branch .....	41
12. Supplementary List of Licensed Cullers .....	41
13. Statement of Letters Received and Dispatched .....	42
14.       "       Locations, etc., under Free Grants Act .....	43
15.       "       Lands Sold .....	50
16.       "       Crown Surveys Completed .....	55
17.       "       Crown Surveys in Progress .....	56
18.       "       Municipal Surveys Ordered .....	57
19.       "       Municipal Surveys Confirmed .....	57
20. Surveyor's Report, Township Outlines, Districts of Sudbury and Timiskaming .....	58
21.       "       Township Outlines, District of Algoma .....	61
22.       "       Township Outlines, District of Timiskaming .....	62
23.       "       Traverse of Shores of Charleston and Red Horse Lakes and Islands Therein .....	65
24.       "       Windy Lake, District of Sudbury .....	67
25.       "       Lower and Middle Shebandowan Lakes .....	68
26.       "       Base and Meridian Lines, District of Thunder Bay....	70
27.       "       Meridian Line, District of Kenora .....	73
28.       "       Black Sturgeon River Pulp and Timber Limit .....	74
29.       "       Township of Williamson, District of Algoma .....	78
30.       "       Township Outlines between Kapuskasing and Groundhog Rivers, District of Timiskaming .....	80
31.       "       Pic River Pulpwood and Timber Limit ....	84
32.       "       Township of Cumming, District of Algoma .....	86
33.       "       Traverse Opazatika River and Lakes, Pishkanogama Lake, Groundhog and Horwood Lakes, and Sahkawatawichtah River and Lake .....	87
34.       "       Township Outlines, District of Sudbury .....	92
35.       "       Traverse Lakes, Rivers and Portages, Timagami Forest Reserve, Districts of Sudbury and Nipissing ..	95
36. Report of Settlers' Loan Commissioner .....	96
37. Algonquin Provincial Park, Superintendent's Report .....	98
38. Quetico Provincial Park, Superintendent's Report .....	102
39. Colonization and Immigration, Director's Report .....	103
40. Forestry, Provincial Forester's Report .....	105
41. Fuel Supply, Wood-cutting Permits to Municipalities .....	126
42. Colonization Roads, Director's Report .....	126
43. Northern Ontario Development, Commissioners' Reports .....	163



Venctia Islands, Lake Rosseau.



# Report of the Minister of Lands, Forests and Mines of the Province of Ontario

For the Year Ending 31st October, 1919

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*To His Honour the Lieutenant-Governor of the Province of Ontario.*

MAY IT PLEASE YOUR HONOUR:

I have the honour to submit for the information of your Honour and the Legislative Assembly a report for the fiscal year ending 31st October, 1919, of the management of the Crown Lands of the Province.

## CLERGY LANDS.

The collection on account of Clergy Lands was \$487.70. No land was disposed of during the year. (See Appendix No. 3, page 24.)

## COMMON SCHOOL LANDS.

The area of these lands sold during the year was 72.33 acres for \$109.87. The collection on account of these and former sales was \$7,984.02. (See Appendix No. 3, page 24.)

## GRAMMAR SCHOOL LANDS.

The collection on account of former sales was \$627.54. (See Appendix No. 3, page 24.)

## UNIVERSITY LANDS.

The area of these lands sold during the year was 119.50 acres for \$59.75. The collection on account of these and former sales was \$2,064.40. (See Appendix No. 3, page 24.)

## CROWN LANDS.

There was sold during the year for agricultural and town site areas 49,704.32 acres for \$48,119.74. The collection on account of these and former sales was \$79,841.77. There was sold for mining purposes 10,600.28 acres for \$28,350.01. There was collected on account of these and former sales \$28,510.54.

There was leased for mining purposes 2,137.21 acres for \$1,562.99. There was collected on account of these leases and those of former years \$14,270.78. There was leased of Crown Lands an area of 8,820.41 acres for \$2,164.25. There was collected on account of these and the leases of former years \$66,024.15.

The total area of Crown lands disposed of by sale and lease during the year was 71,454.05 acres for a value of \$80,366.61, as compared with 103,701.59 acres sold and leased in 1917 for \$80,345.43. The total collection on account of the sales, leases, etc., was \$199,810.90. (See Appendix No. 3, page 24.)

#### SALES.

Throughout the fiscal year ending 31st October, 1919, more inquiries were received and answered than during any corresponding period since the outbreak of



Field peas, Boulter Ranch, Nipissing District.

the Great War. While all these did not result in actual sales it is gratifying to observe that more purchasers acquired land during the past than the previous year although the acreage involved is approximately the same. Appendix No. 15 is a compilation of all land sales and grants other than those occurring in Free Grant Territory and from this may be ascertained in detail the transactions according to townships, agencies and districts. It was necessary to cancel 208 sales for failure of the purchasers to meet the prescribed conditions of settlement while 19 sales were restored for just cause and 312 settlers, for various reasons, were permitted to assign their interests to bona fide tillers of the soil.



Settlers to the number of 539 proved up and acquired their patents for an area of 55,000 acres against approximately 400 and an acreage of 36,000 for the year 1918. An evidence of the desire of the settlers to maintain their payments in respect of land purchases is found in the fact that the collections on account of new and old sales exceeded last year's by nearly \$30,000, although in a number of cases where returned soldiers presented their credentials the arrears due the Crown were remitted. Several old Clergy and Common School land sales were paid in full and the proper claimants secured titles.

The unsolved problems arising out of the war with the general state of unrest and the somewhat restricted field from which to draw desirable settlers tend to withhold for the time being a rush to the northern sections of the Province. The economic strain of modern life conduces to a desire to a hurried investment and a quick and extensive return from the land rather than to an ambition to hew out a home by steady and persistent pioneer methods.



Flock going to pasture; Boulter Ranch, Nipissing District.

With a gradual return, however, to more stable conditions and to a more general realization of the necessity of putting in labour on the undeveloped lands of the Crown to secure adequate crop results and, within a measurable degree of success, a reasonable equilibrium between production and consumption, there shall be an impetus to the "back to the land" movement. Any predictions apart from this as respects land purchases and active settlement in Northern Ontario would be unjustifiable in the face of problematical immigration conditions and the financial aid and general appeal held out to returned men to resume the many abandoned cleared farms in the older sections of the Province.

#### FREE GRANTS.

There were 576 settlers who took up free homesteads within the year, or over 150 more than the previous year. The area thus located comprised 72,420 acres. Patents for such homesteads issued to 431 while assignments numbering 253

covering an area of 34,123 acres were duly approved. The privilege of buying an additional area adjacent to a homestead for pasturing fuel or cropping purposes was exercised by 140 locatees.

Although in Appendix No. 14 practically all the Free Grant townships appear for the purposes of maintaining a detailed reference according to agencies and districts a perusal of same will show that in some no locations were effected and in others but few. This is due to the fact that many of the areas involved have been in the market for a long period and all the desirable land therein has been acquired.

Checking up delinquents with a view to ascertaining the extent of their settlement requirements resulted in the cancellation of 425 persons whose locations in a number of instances had been allowed years ago.

The remarks under the previous heading "Sales" in respect of the future of settlement apply with equal force to Free Homesteading.

A list of the islands sold in Free Grant territory appears in Appendix 14.

#### PATENTS, LEASES, LICENSES.

Instruments to the number of 1,394 were issued through the Patents Office, an increase of 43 over the year ending 31st October, 1918.

Of the total 850 covered settlers' patents, 68 veteran grants and 377 mining grants and leases. The remaining 190 consisted of Crown Leases, Licenses of Occupation, Pine Patents and Orders-in-Council.

In addition to the entry of all such documents the Patents Office is required to prepare references, make daily searches respecting old grants, record new ones and to regularly mark and maintain the office maps showing all transactions as indicated in the instruments issued in accordance with Appendix 8.

#### MILITARY GRANTS.

Under the Veteran Land Act, 1 Edward VII, Cap. 6, and amendments thereto, there have been issued 13,998 certificates, and although the time for receiving applications for these grants expired on the 30th September, 1908, there are still letters being received from men who were entitled to this grant, but claim that they have only now become aware of the fact. These applications, therefore, could not now be accepted and no forms of applications have been sent out.

During the past year there have been located 45 of these certificates covering 7,189 acres in the townships open for veterans, making in all a total of 8,329 certificates thus located.

In six cases the certificates have been surrendered and applied in payment of lands purchased from the Crown, covering in all 960 acres, making a total of 791 that have thus been applied.

There were three certificates surrendered to the Crown for the \$50.00 commutation money, making a total of 3,263 certificates surrendered in this manner.

During the year there have been issued 34 patents for lands located by veterans, and in all 7,371 have thus been disposed of.

The total number of certificates that have, therefore, been disposed of is 12,383, leaving 1,615 that are still outstanding.

During the year 16 veteran locations, covering 2,549 acres, were cancelled for the non-performance of the settlement duties to which they became subject on account of being assigned before patent was issued.



Under the Act 1 Edward VII, Cap. 6, and amendments thereto covering these grants it is necessary for all locatees of the lands granted under this Act to apply for their patents for such lands before ten years have expired from the date of location. If this application for patent is not made within ten years then the land comes under the settlement regulations, and unless the settlement duties are proceeded with, the locations are liable to cancellation. Previous to the expiration of the ten years after location, the Department has sent a notice to each veteran, who should apply for his patent stating this fact, and in this manner has saved many of the locations from becoming subject to the settlement duties. See Appendix No. 11.

#### FINANCIAL ASSISTANCE TO SETTLERS.

The Settlers' Loan Commissioner reports having received up to October 31st, 1919, a total of 2,001 applications for loans, amounting in all to \$776,790.00. In all, 1,414 loans have been made to settlers amounting to \$442,256.00. In addition, an advance of \$12,000 was made to the Sudbury Co-Operative Creamery Company, to which reference was made in the annual report for the previous year.

Requests for loans are given most careful consideration, but advances are not made except in cases where the security offered is sufficient to afford the Department every reasonable protection.

It is worthy of note that nearly 90 per cent. of accrued interest payments have been taken care of by borrowers, and further that payments on principal have exceeded the amounts due on account—numerous loans having been paid off in advance of date of maturity.

The settlers of Northern Ontario, generally speaking, appear to appreciate fully the advantages afforded by the Settlers' Loan Commissioner, and the amounts which have been advanced, undoubtedly, have greatly assisted settlement in the north, and have also considerably increased production along agricultural lines.

#### MEMORANDUM RE MINERAL INDUSTRY IN ONTARIO FOR 1919.

The chief metallic products of Ontario are nickel, copper, gold and silver. The effect of the great war was to stimulate the production of three of these metals, namely, nickel, copper and silver, while on gold it had the opposite effect.

Nickel and copper are essentials for modern warfare, and while the war continued their production rose to the maximum capacity of the mines. Of nickel the total output in 1918 was 46,072 tons, having a value of \$27,840,422. The signing of the armistice on the 11th November, 1918, found the allied governments and munition contractors stocked with nickel and the demand at once ceased. Curtailment of operations at the mines and smelters immediately followed, and for the larger part of 1919, only a minimum amount of work was done, awaiting the absorption of the surplus nickel by peace and reconstruction industries. Towards the end of the year demand revived, and the prospect is for an early resumption on a pre-war scale. The total output in 1919 was about one-half that of the previous year, and the value fell to about \$12,000,000. There was a similar reduction in the output of copper, say from 23,000 tons to about half the quantity, the value being about \$3,500,000.

The extraordinary demand for silver, and the falling off of the output in all silver-producing countries, had a marked effect on the Cobalt silver mines. This

demand continued and was intensified during 1919. With silver at \$1.25 and \$1.30 per ounce, waste dumps became valuable, and abandoned properties were reworked. Long continued and steady production by the established mines has now told heavily on the reserves of ores at Cobalt. Labour strikes brought about a stoppage of the mines for nearly two months. When the statistics of production are compiled, they will doubtless show a heavy falling off in the quantity of silver produced as compared with 1918. The increased price of the metal will assist the figures of aggregate value, but these too will show a decline.

In the case of gold, the steadily mounting cost of supplies and labour narrowed the margin for profits while the war lasted. There has been no relaxation in these respects even since, but with the return of the skilled miners the efficiency of labour has markedly risen. The gold output for 1919 will be about \$10,000,000, or an increase of \$1,800,000 over 1918. In fact, the outlook of gold mining in Northern Ontario is decidedly good. The Hollinger mine at Porcupine, is one of the largest gold mines of the world, and is now producing at the rate of about \$8,000,000 per annum. Ore reserves at the Hollinger and McIntyre mines are being enlarged, and the camp is on a solid basis. The position of Kirkland Lake, too, has been improved. The east-and-west vein system running through the bed of Kirkland Lake and lying to the south of it, contains high gold values, and a group of important mines is being established upon it. The Lake Shore, Wright-Hargreaves, Kirkland Lake, Teck-Hughes, and others are in this neighbourhood. Tough-Oakes and Associated Gold Mines lie further to the east. The newer gold camps, including Boston Creek, Bourkes, Fort Matachewan and others, are passing through the development stage. At Larder Lake there is also considerable activity. Gold finds have been made near Schreiber on the main line of the C.P.R. and south of Dryden station. It can be truthfully said that in the pre-Cambrian formations of Northern Ontario the gold prospector will find as promising a scene for his labours as anywhere else in the world.

Other minerals are being sought for in territory north of the Transcontinental railway. Lignite, iron ore, gypsum and refractory clay are known to exist, and these deposits are now being investigated. The limestone formations underlying the coastal slope by no means preclude the existence of oil, gas or salt. Distances are great and the expense of moving machinery is heavy, and it is proposed by some to call in the use of the seaplane to assist in exploration.

The mineral industry in older Ontario is largely a non-metallic one, except in Hastings county and the lead deposits on the Ottawa river. The output of building materials has been kept down by the high level to which prices have risen, and until there is a reduction in values, or what is more likely to happen, until the new level becomes a normal one, capital will not flow freely into the building trade. Petroleum shows an increase in production over 1918; natural gas a decline, due both to the failing supply and to the governmental efforts at restriction to domestic uses. The remaining materials on the long list of non-metallic products, continue to be produced in about the usual quantities, but in most cases in larger values.

#### COLLECTIONS.

The total revenue of the Department from all sources was \$2,755,736.28. Of this, \$79,841.77 came from Agricultural lands and Town sites; Mining lands, \$28,510.54; Mining and Crown Leases, \$80,294.93; Miners' licenses, permits and recording fees, \$63,962.90; Supplementary Revenue tax, \$626,321.20. From Woods



and Forests the revenue was \$1,803,081.36, made up of the following items, Bonus, \$872,598.69; Timber dues, \$662,928.30; Ground rent, \$87,682.52; Transfer fees, \$5,205.00; Fire protection charge, \$174,666.85. (See Appendix No. 4, page 25.)

#### DISBURSEMENTS.

The total expenditure of the Department for ordinary service was \$1,536,766,-93. Some of the principal items were: Crown Land agents' salaries and disbursements, \$18,915.79; homestead inspectors, \$16,934.76; Crown timber agents, \$31,580.81; Ottawa agency, \$3,240.55; fire ranging, \$528,734.64; forest ranging and estimation of timber, \$140,338.50; forest reserves, \$6,140.25; salaries, wages and expenses of men, *re* reforestation, \$6,923.56; investigation in reforestation, \$5,465.17; investigation of forest tree diseases, \$5,651.77; surveys, \$128,823.25; colonization roads, \$390,621.54; printing and advertising, \$21,351.13; emigration work in Great Britain, \$34,052.07; grant to Brigadier-General R. F. M. Sims, \$5,000.00; purchase and distribution of films, \$4,543.95; mines and mining, \$77,308.29; mining recorders, \$24,681.62; Provincial assay, \$6,075.21; natural gas advisory board, \$6,460.13; contingencies, lands and forests, \$31,302.37; Bureau of Mines, \$12,731.91; forestry, \$1,425.29; colonization, \$2,100.25; colonization roads, \$4,130.64.

A further sum of \$177,973.35 was expended under the direction of the Department, distributed as follows: Algonquin Provincial Park, \$31,223.76; Quetico Provincial Park, \$11,291.69; Veterans' Commutation, \$150.00; Royal Nickel Commission, \$46.85; legal investigations, \$2,171.50; fuel investigation, \$118,089.55; fuel problem, \$15,000.00. (See Appendices Nos. 6 and 7.)

#### WOODS AND FORESTS.

The accrued revenue from Woods and Forests for the year ending October 31st, 1919, amounted to \$2,278,558.66, which exceeded that of the previous year by \$642,874.33.

The revenue collected during the same period totalled \$1,803,081.36, or \$46,996.11 in excess of the amount collected during the year ending October 31st, 1918.

The production of pine timber during the season of 1918-19 amounted to over one hundred and ninety-two million feet board measure, as against approximately two hundred and eighteen million feet for the previous season, representing a decrease of, in round numbers, twenty-six million feet. The production of other timber amounted to somewhat over thirty-eight million feet, as against twenty-nine million feet for the previous season.

Pulpwood cut from Crown lands for the season 1918-19 amounted to 320,195 cords as against 338,563 cords for the previous season.

A very large increase will be noted in the number of railway ties removed from Crown lands. The cut for the current season amounted to 5,140,654 ties as against 2,094,099 ties cut during the season of 1917-18. The price of railway ties continues to advance.

No pulpwood concessions were disposed of during the current year.

It might also be noted that pulpwood amounting to 414,977 cords was removed from settlers' lands, also 1,064,675 railway ties.

## LANDS UNDER LICENSE.

The area under license at the close of the fiscal year was 16,231 square miles, a decrease of 657 square miles from the previous year.

## SUMMARY OF REVENUE FROM WOODS AND FORESTS.

Bonus.....	\$872,598 69
Timber Dues .....	662,928 30
Ground Rent .....	87,682 52
Transfer Fees .....	5,205 00
Fire Protection .....	174,666 85
	<hr/>
	\$1,803,081 36

## CULLERS' EXAMINATION.

Two examinations were held during the year, one at North Bay and one at Kenora. Four candidates succeeded in passing the examination and were duly granted certificates authorizing them to act as Cullers. For names of Cullers who passed at these examinations, see page 41, Appendix 12. For complete list of licensed Cullers see Minister's Reports for 1917 and for 1918.

## FIRE PROTECTION.

The season of 1919 was the third season during which the Forestry Branch was charged with the work relating to the Forest Fire Prevention Act of 1917. In submitting his report for 1919, the Provincial Forester suggests that consideration be given to legislation which will provide for compulsory fire fighting by local labour in cases of necessity. Attention is also drawn to the advisability of amending the Forest Fires Prevention Act to provide more effective penalties for violation of the permit regulations. Such violations of the permit regulations are punishable at the present time by fine only.

During the season of 1919, six thousand six hundred and thirty-five fire permits were issued covering a total of 26,790 acres, as against nine thousand five hundred and ninety permits for the season of 1918, covering 39,633 acres. Twenty-three persons were prosecuted for infractions of the permit regulations and convictions were secured in twenty cases. As has been intimated above, the time seems opportune for consideration of the insertion in the Act of provisions for more drastic penalties in cases of flagrant offences.

The territory protected was divided into thirty ranger districts. The field force consisted of one Superintendent, four Inspectors, thirty Chief Rangers, forty-nine Deputy Chief Rangers, with a maximum of one thousand and fourteen rangers.

## FOREST FIRES.

During the early part of the fire season the weather was comparatively wet, and it was accordingly possible to keep the ranging staff at a minimum. In the month of May the weather became very dry, and a period of three months of abnormally dry weather conditions followed. Fires became numerous and assumed large proportions.

Difficulty was first encountered in the Clay Belt District. The permit system undoubtedly saved the situation from becoming more serious than was actually the case. Clearing fires, however, in numerous cases got out of control, and



resulted in the destruction of considerable property but fortunately there was no loss of life.

The most serious loss and damage occurred in the central inspectorate, embracing, roughly, the middle portion of the white pine belt in Ontario. It does not appear that the loss of standing timber was the most serious factor, but rather the destruction of young growth. In the strip of country lying between Lake Nipissing and Sault Ste. Marie, lying south of the Mississauga Forest Reserve it appears that approximately 522,000 acres were burned over. The western and southern inspectorates also suffered from severe fires.

The protracted period of dry weather, in some districts, the scarcity of water and the extreme difficulty in securing competent labour, all added to the difficulties of the fire ranging staff and added to the losses occasioned.

Measures will have to be taken having in view the more thorough protection of cut-over lands, and it would seem the time is opportune to consider the more general adoption of slash disposal regulations.

The total area reported as being burned over exceeded 922,000 acres.

It is found once again that the various railways were the most fruitful causes of fires. Reports indicate that 48 per cent. of all fires reported originated from this source. 8.2 per cent. of all fires reported were attributed to settlers, 11.2 per cent. to campers, the remainder from various causes—in numerous cases unknown.

#### IMPROVEMENT WORK.

Improvement work was necessarily curtailed during the season of 1919, owing to the serious fire situation and to the shortage of labour.

#### EQUIPMENT.

Steps were taken to have all equipment such as canoes, railway velocipedes, etc., painted the same colour, and after a uniform pattern. All equipment was stencilled, or branded, and the main articles of equipment were numbered on a definite system, to assist in the keeping of proper records, and to determine the life of various goods supplied by different manufacturers. Considerable new equipment in the shape of canoes, power boats, tents, etc., was added.

Large provision is required for the proper storage of all equipment, and accordingly, a number of store-houses have been erected notwithstanding which it has been found necessary to rent considerable warehouse space.

The educational campaign in the way of instructing the public as to the prevention of forest fires was continued. Numerous fire signs were posted, and in addition, quantities of pencils, calendars and rulers were sent out in quarters where it was calculated that the best results would be obtained.

#### LOCOMOTIVE INSPECTIONS.

One thousand and twelve locomotive inspections were made at an average cost of \$2.07 per inspection. Two hundred and twenty-one inspections showed defects.

#### FORESTRY.

Particular attention is directed to the section of the Provincial Forester's report dealing with problems of reforestation. Valuable work is being done at the Provincial Forest Station in Norfolk County. About 40,000 trees were sent

out during the season to private planters. The work at the station has proceeded under difficulties for the past few years owing to difficulty in securing reliable seed. It is anticipated that there should be no great difficulty in placing this work on a more satisfactory basis in the near future.

#### TREE DISEASES.

Dr. J. H. Faull continued his investigations, and has submitted a very valuable report which will be found embodied in the report of the Provincial Forester. A complete summary of the work of the Forestry Branch will be found in Appendix 40, page 105.

#### CROWN SURVEYS.

Instructions were given to perform the following surveys of Crown lands during the year and the work was carried out as shown in the latter portion of this report.

These surveys comprise:—

- (1) Three hundred and thirty miles of meridian and base lines including parts of the boundary lines between Rainy River, Kenora and Thunder Bay Districts.
- (2) Eight hundred and forty miles of township outlines in the Districts of Thunder Bay, Algoma, Timiskaming and Sudbury.
- (3) Subdivision into lots and concessions of the Township of Fowler and parts of the Townships of Devon, Hanlan, Casgrain and Nansen.
- (4) Traverse survey of lakes west of Lake Timagami in the Timagami Forest Reserve, Districts of Nipissing and Sudbury.

Dog Lake, Long Lake and Upper Shebandowan Lake, in the District of Thunder Bay.

Opazatika and Dog Lake, in the District of Algoma.

Missinaibi Lake, Pishkanogama Lake, Horwood Lake and Sahkatawichtah Lake, in the District of Sudbury.

Charleston Lake in the County of Leeds.

- (5) Retracing of part of the boundary of the Algonquin Provincial Park, District of Nipissing.
- (6) Survey of timber limit lines in the Township of Wigle, District of Sudbury, and in territory east of the Township of Askin, in the District of Nipissing.
- (7) Close traverse of shores and islands in Windy Lake, Townships of Dowling and Cascaden, District of Sudbury, including soundings and the fixing of special lines of reference for mining purposes.

Twenty-five survey parties were engaged on this work and most of the surveyors report a very difficult and trying season's work due to labour and weather conditions.

The reports received from the Inspector of Surveys show that the work in general has been well performed.

#### MUNICIPAL SURVEYS.

Petitions for Municipal surveys were received from the municipalities of the Townships of Williamsburgh, McNab and Southwold, for the survey of certain original road allowances within the said townships, and these petitions were acted



upon as provided for under R.S.O. 1914, Cap. 166, sections 13 and 14. In addition to the above the survey performed in the Township of Goulbourn on petition of the municipality was confirmed.

Detailed description of the several surveys performed under instructions from this Department will be found in Appendices 20 to 35, inclusive.

#### COLONIZATION ROADS.

On March 1st, 1919, the Colonization Roads Branch of the Public Works Department was transferred to the Department of Lands, Forests and Mines. A report as to the work of the Colonization Roads Branch will be found in Appendix 42, page 126.

#### NORTHERN DEVELOPMENT BRANCH.

The work of the Northern Development Branch was continued as in the past under the direction of Mr. J. F. Whitson and Mr. C. H. Fullerton. The work on the Sault-Sudbury Trunk Road, together with the work on the roads on St. Joseph's Island was placed under the direction of Mr. John L. Lang, of Sault Ste. Marie. It is expected that the Sault-Sudbury road will be completed during 1920. Every endeavour is being made to keep existing portions of this road in a proper state of repair. The report of the Northern Development Branch is found in Appendix 43, page 163.

G. H. FERGUSON,

*Minister.*

Department of Lands, Forests and Mines,  
Toronto, October 31st, 1919.

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# APPENDICES

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## Appendix No. 1.

Return of Officers and Clerks of the Department of Lands, Forests and Mines for the year ending October 31st, 1919.

Branch.	Name.	Designation.	When Appointed.	Salary per annum.	Remarks.
Lands Branch.....	Hon. G. H. Ferguson.....	Minister .....	1914, Dec. 22.....	\$6,000 00	<u>— Grant.</u>
	Albert Grigg .....	Deputy Minister .....	1915, Oct. 18.....	4,400 00	
	C. C. Hele .....	Minister's Secretary and Secretary to Department .....	1911, Oct. 19.....	2,700 00	
	H. M. Robbins .....	Assistant to Deputy Minister .....	1917, Feb. 19.....	2,400 00	
	J. Farrington .....	Clerk .....	1907, Nov. 11.....	1,300 00	
	A. G. Thompson .....	do .....	1907, Sept. 23.....	1,000 00	Resigned August 31, 1919.
	W. A. Fleming .....	do .....	1914, Apr. 30.....	1,000 00	
	R. P. Ferguson .....	Stenographer .....	1918, Apr. 2.....	900 00	
	J. J. Murphy .....	Advisory Chief Clerk .....	1872, May 1.....	2,300 00	
	W. C. Cain .....	Chief Clerk .....	1903, Mar. 1.....	2,400 00	
	H. E. Johnston .....	Clerk of Military Grants.....	1905, Mar. 25.....	1,850 00	
	W. R. Ledger .....	Clerk of Sales .....	1894, Feb. 15.....	1,750 00	
	S. Draper .....	Clerk of Free Grants .....	1900, May 1.....	1,700 00	
	S. A. Platt .....	Clerk .....	1905, June 12.....	1,350 00	
	F. A. Lucas .....	do .....	1906, Dec. 18.....	1,400 00	
	J. E. Drinkwater .....	do .....	1915, Oct. 19.....	1,400 00	
	C. S. Jones .....	Clerk of Patents .....	1890, May 22.....	2,150 00	
	W. S. Sutherland .....	Engrossing Clerk .....	1900, Mar. 18.....	1,600 00	
	C. E. Burns .....	Reference Clerk .....	1897, July 29.....	1,700 00	
	W. Carrell .....	Engrossing Clerk .....	1899, Dec. 18.....	1,500 00	
	A. E. Robillard .....	do .....	1894, May 4.....	1,200 00	
	A. E. Roe .....	Clerk of Registers .....	1906, Oct. 16.....	1,550 00	
	S. Ross .....	Stenographer .....	1917, July 9.....	950 00	
	M. Bengough .....	do .....	1896, Oct. 23.....	950 00	
	E. F. O'Neil .....	do .....	1902, July 7.....	950 00	
	E. G. Halliday .....	do .....	1907, Feb. 21.....	950 00	
	B. M. Benson .....	do .....	1909, May 25.....	900 00	
	E. Hills .....	do .....	1912, July 2.....	900 00	
	E. Singleton .....	do .....	1917, Apr. 16.....	850 00	
	L. V. Rorke .....	Director .....	1909, May 1.....	3,500 00	
	J. Hutcheon .....	Surveyor and Draughtsman.....	1913, Apr. 1.....	2,700 00	



Surveys .....	W. F. Lewis .....	Clerk .....	1872, Mar. 1....	1,400 00
	D. G. Boyd .....	Draughtsman .....	1896, Oct. 16....	1,900 00
	E. M. Jarvis .....	Clerk .....	1897, Apr. 25....	1,650 00
	J. B. Proctor .....	do .....	1897, Jan. 15....	1,500 00
	B. Rushford .....	Draughtsman .....	1910, Jan. 24....	1,400 00
	F. E. Blanchet .....	do .....	1906, May 15....	1,400 00
	A. Leaman .....	do .....	1907, Sept. 12....	1,400 00
	H. Treeby .....	do .....	1896, Jan. 25....	1,500 00
	J. Work .....	do .....	1909, May 18....	1,600 00
	M. H. Kirkland .....	Stenographer .....	1902, July 21....	950 00
Woods and Forests .....	C. O'Connor .....	do .....	1907, Oct. 16....	850 00
	E. C. Armer .....	do .....	1909, Aug. 6....	875 00
	J. A. G. Crozier .....	Advisory Chief Clerk .....	1867, Dec. 1....	2,300 00
	J. Houser .....	Chief Clerk .....	1905, July 17....	2,150 00
	J. B. Cook .....	Clerk .....	1894, Aug. 7....	1,950 00
	H. Gillard .....	do .....	1897, Dec. 6....	1,750 00
	F. J. Niven .....	do .....	1897, Dec. 15....	1,800 00
	W. F. Trivett .....	do .....	1900, June 25....	1,600 00
	R. H. Hodgson .....	do .....	1903, Oct. 15....	1,450 00
	A. H. O'Neil .....	do .....	1906, July 19....	1,300 00
Accounts .....	S. D. Meeking .....	do .....	1910, Feb. 8....	1,200 00
	E. H. Squire .....	do .....	1916, Jan. 4....	1,200 00
	E. H. Telfer .....	do .....	1915, Sept. 27....	1,100 00
	M. E. Bliss .....	Stenographer and Filing Clerk .....		
	C. Rowland .....	to Deputy Minister .....	1909, Aug. 16....	1,000 00
	H. Canton .....	Stenographer .....	1912, May 1....	950 00
		do .....	1915, May 11....	875 00
	D. G. Ross .....	Accountant .....	1861, Apr. 15....	3,000 00
	H. M. Lount .....	Clerk .....	1903, Oct. 1....	1,850 00
	C. J. Clarke .....	do .....	1905, Aug. 9....	1,450 00
Forestry .....	R. Gordon .....	do .....	1912, July 30....	1,250 00
	W. A. Burritt .....	do .....	1907, Sept. 24....	1,450 00
	C. Bowland .....	Clerk and Stenographer .....	1908, July 9....	950 00
	E. J. Zavitz .....	Provincial Forester .....	1912, Nov. 7....	3,500 00
	J. H. White .....	Assistant Provincial Forester .....	1917, Apr. 1....	3,000 00
	F. S. Newman .....	Forester .....	1913, Sept. 22....	1,800 00
	G. W. Harris .....	Clerk .....	1906, Sept. 1....	1,300 00
	N. L. Rogers .....	do .....	1911, Aug. 1....	1,400 00
	J. Bald .....	Stenographer .....	1913, June 12....	850 00
			Resigned Oct. 31, 1919.	

## Appendix No. 1.—Concluded.

Return of Officers and Clerks of the Department of Lands, Forests and Mines for the year ending October 31st, 1919.

Branch.	Name.	Designation.	When Appointed.	Salary per annum.	Remarks.
Colonization	H. A. Macdonell	Director	1910, Feb. 16....	2,500 00	
	J. Argue	Clerk	1905, Apr. 1....	1,750 00	
	R. A. Jones	do	1906, Mar. 1....	1,600 00	
	C. W. Garthwaite	do	1910, Apr. 1....	1,400 00	
	S. O. Dennis	Clerk and Stenographer	1910, Mar. 2....	950 00	
	R. Duggan	Stenographer	1903, June 30....	950 00	
Records	F. R. Dunlop	do	1911, Nov. 1....	900 00	
	B. McDonald	do	1910, June 21....	950 00	
	S. K. Burdin	Chief Clerk	1916, Apr. 6....	2,500 00	
	C. Dies	Clerk	1905, Oct. 2....	1,500 00	
	A. P. Saunders	do	1912, May 13....	1,300 00	
	C. W. St. John	do	1906, July 9....	1,250 00	
Colonization Roads	A. Ferguson	do	1915, Dec. 15....	1,400 00	
	W. B. Baines	do	1912, Apr. 9....	1,200 00	
	F. Samuels	do	1903, Dec. 5....	1,200 00	
	N. Mathewson	do	1915, May 7....	1,100 00	
	H. Brophy	Mailing Clerk, etc.	1898, Oct. 1....	1,150 00	
	C. H. Fullerton	Superintendent	1915, Oct. 15....	3,500 00	
Bureau of Mines	M. P. Doherty	Accountant and Chief Clerk	1898, May 1....	1,850 00	
	C. H. Meader	Surveyor and Draughtsman	1912, June 14....	1,700 00	
	J. H. Bradshaw	Clerk	1884, June 10....	1,400 00	
	A. Gamey	do	1914, July 19....	925 00	
	P. Godkin	Stenographer	1917, Aug. 27....	925 00	
	T. W. Gibson	Deputy Minister	1891, June 19....	4,500 00	
D. GEO. ROSS, Accountant.	R. D. Fisher	Secretary	1905, Feb. 21....	1,800 00	
	D. H. Barr	Clerk	1906, Aug. 7....	1,600 00	
	F. L. Godson	do	1915, Mar. 22....	1,150 00	
	W. Lemoine	do	1907, Jan. 29....	1,450 00	
	Anne Moffatt	do	1901, Feb. 25....	1,400 00	
	A. G. Scovell	do	1907, June 17....	1,450 00	
Albert Grigg, Deputy Minister of Lands and Forests.	J. L. McNaughton	Clerk and Stenographer	1908, Feb. 10....	950 00	
	H. W. Batchelor	Stenographer	1911, Aug. 16....	900 00	
	M. G. Baptie	Clerk and Stenographer	1917, May 10....	850 00	
	R. McElree	do	1916, June 19....	800 00	

D. GEO. ROSS,  
Accountant.

ALBERT

GRIGG,

Deputy Minister of Lands and Forests.



Appendix No. 2.  
List of Agents for the year ending October 31st, 1919.

Name.	Post office address	District or County.	Date of appointment.	Salary per annum.	Remarks.
<i>Land Agents.</i>					
Anderson, T. V. ....	Hearst .....	Part District of Algoma .....	1913, May 9.	\$800 00	
Arthurs, E. ....	Espanola Mills .....	do do .....	1915, May 7.	200 00	
Baker, R. H. ....	Minden .....	Part Victoria .....	1907, Oct. 1.	350 00	
Bolger, J. W. ....	New Liskeard .....	Lake Temiskaming, District of Nipissing ..	1913, July 17.	1,000 00	
Both, C. ....	Denbigh .....	Part of Frontenac and Addington .....	1905, Oct. 20.	200 00	
Brown, John .....	Markstay .....	do District of Nipissing and Sudbury ..	1916, June 27.	500 00	
Brown, J. B. ....	Bracebridge .....	Muskoka District .....	1903, Jan. 28.	.....	For salary see Homestead Inspector.
Burrows, W. A. ....	Port Arthur .....	Part District of Thunder Bay .....	1912, Jan. 30.	1,000 00	
Cameron, W. ....	Stratton Station ..	do do .....	1911, Apr. 27.	500 00	
Campbell, I. M. ....	Parry Sound .....	Rainy River .....	1914, Nov. 12.	500 00	
Dempsey, S. J. ....	Cochrane .....	do do .....	1911, Feb. 9.	1,000 00	
Dodds, T. ....	Thessalon .....	do do .....	1915, May 4.	500 00	
Douglas, W. J. ....	Maynooth .....	do Hastings .....	1912, June 12.	500 00	
Ellis, H. J. ....	Powassan .....	do District of Parry Sound .....	1909, May 21.	500 00	
Freeborn, Dr. J. S. ..	Magnetawan .....	do do .....	1905, Nov. 10.	500 00	
Gibson, J. E. ....	Dryden .....	District of Rainy River .....	1914, Nov. 20.	900 00	
Ginn, F. E. ....	Matheson .....	Part District of Nipissing .....	1912, Mar. 20.	1,000 00	
Hales, W. ....	Apsley .....	do County of Peterborough .....	1911, July 20.	250 00	
Hollands, C. J. ....	Fort Frances .....	do Township of Alberta and District of Rainy River .....	1892, Oct. 12.	300 00	
Jenkin, W. ....	Emsdale .....	do District of Parry Sound .....	1908, July 29.	500 00	Died May 23rd, 1919.
McFayden, A. ....	Emo .....	do do .....	1905, Sept. 8.	600 00	
MacLennan, J. K. ....	Sudbury .....	do do .....	1905, July 3.	700 00	
Noble, E. ....	Sault Ste. Marie ..	do do .....	1913, Feb. 1.	300 00	
Parsons, W. J. ....	North Bay .....	do do .....	1908, Apr. 8.	800 00	
Philton, J. A. ....	Sturgeon Falls ..	do do .....	1907, Sept. 13.	500 00	
Prince, A. ....	Wilno .....	do of Renfrew .....	1905, July 12.	500 00	
Small, R. ....	Mattawa .....	do District of Nipissing .....	1910, June 30.	500 00	
Spry, W. L. ....	Kenora .....	do do .....	1909, Sept. 21.	600 00	Also Mining Recorder.
Teasdale, R. A. ....	Massey .....	do do .....	1917, July 1.	500 00	
Thaw, D. ....	Emsdale .....	do do .....	1919, July 2.	500 00	
Watt, F. ....	Pembroke .....	do do .....	1913, May 28.	300 00	
Whybourne, W. E. ....	Marksville .....	do of Renfrew .....	1915, June 1.	175 00	
Wilson, A. N. ....	Kinmount .....	do of St. Joseph Island .....	1905, Apr. 7.	300 00	
Woollings, J. ....	Englehart .....	do of Peterborough .....	1915, June 1.	175 00	
		do of District of Nipissing .....	1908, June 30.	800 00	

## Appendix No. 2.—Continued.

List of Agents for the year ending October 31st, 1919.

Name.	Post office address	District or County.	Date of appointment.	Salary per annum.	Remarks.
<i>Homestead Inspectors.</i>					
Barr, J. ....	Fort Frances ...	District of Rainy River .....	1906, Nov. 23.	1,200 00	Also Crown Lands Agent.
Bastien, J. A. ....	Chelmsford .....	W. part of Sudbury District .....	1913, May 2.	1,000 00	
Brown, J. B. ....	Bracebridge .....	Muskoka District .....	1905, July 28.	1,000 00	
Burnes, C. W. ....	South River .....	Parry Sound District .....	1905, Nov. 15.	1,000 00	
Cragg, W. V. ....	New Liskeard .....	S. part of Temiskaming District .....	1913, Mar. 27.	1,200 00	
Dean, T. ....	Sault Ste. Marie .....	Algoma District .....	1908, July 29.	800 00	
Hughes, T. ....	Murillo .....	Thunder Bay District .....	1908, July 20.	1,000 00	
Owens, H. B. ....	Cache Bay .....	E. part Sudbury and W. part Algoma Districts .....	1918, June 25.	900 00	
Smith, D. ....	Cochrane .....	N. part of Temiskaming District .....	1912, Apr. 16.	1,500 00	
Watson, T. P. ....	Englehart .....	Centre part of Temiskaming District .....	1905, May 10.	1,200 00	
Wigle, R. G. ....	Dryden .....	Kenora District .....	1914, May 27.	1,200 00	
<i>Timber Agents.</i>					
Brenner, G. ....	Cochrane .....	Part Temiskaming and Algoma Districts .....	1913, May 20.	1,800 00	
Christie, W. P. ....	Parry Sound .....	Part Parry Sound and Muskoka Districts .....	1903, Dec. 4.	1,700 00	
Darby, E. J. ....	Ottawa .....	Part Ottawa District .....	1889, July 26.	1,500 00	
Hawkins, S. J. ....	Webbwood .....	Part Algoma and Sudbury Districts .....	1905, Aug. 16.	1,700 00	
Henderson, C. ....	Sudbury .....	do .....	1902, Jan. 1.	2,100 00	
Huckson, A. H. ....	Sault Ste. Marie .....	Part District of Algoma .....	1914, Apr. 1.	1,800 00	
Jones, W. M. ....	Fort Frances .....	Rainy River District .....	1918, Nov. 15.	1,500 00	
MacDonald, S. C. ....	New Liskeard .....	Part Temiskaming District .....	1907, Jan. 21.	1,700 00	
Margach, W. ....	Kenora .....	Kenora District .....	1889, May 16.	1,600 00	
McDonald, H. ....	Thessalon .....	Part District of Algoma .....	1905, Apr. 20.	1,500 00	
McDougall, J. T. ....	North Bay .....	Nipissing and Part Sudbury District .....	1908, July 8.	1,800 00	
Oliver, J. A. ....	Port Arthur .....	Thunder Bay District .....	1905, Sept. 30.	1,850 00	
Stevenson, A. ....	Peterborough .....	Belleville .....	1905, Oct. 4.	1,500 00	
Wood, W. G. A. ....	South Porcupine .....	Porcupine District .....	1917, Feb. 28.	1,400 00	

## Appendix No. 2.—Continued.

List of Agents for the year ending October 31st, 1919.

Name.	Post office address.	District or County.	Date of appointment.	Salary per annum.	Remarks.
<i>Mining Recorders.</i>					
Campbell, C. A. ....	Sudbury .....	Sudbury Mining Division .....	1910, Jan. 6.	1,250 00	Transferred to Northern Development Branch, May 1, 1919. Also Crown Lands Agent.
Gauthier, G. H. ....	South Porcupine. ....	Porcupine Mining Division .....	1912, July 16.	1,500 00	
Hough, J. A. ....	Matheson .....	Larder Lake Mining Division .....	1907, May 22.	1,550 00	
Miller, N. ....	Sault Ste. Marie. ....	Sault Ste. Marie Mining Division .....	1915, June 9.	1,200 00	
Morgan, J. W. ....	Port Arthur .....	Port Arthur Mining Division .....	1906, Dec. 28.	1,200 00	
Morgan, M. R. ....	Elk Lake .....	Gowganda and Montreal River Min. Div. ....	1919, May 19.	1,100 00	
McAulay, N. J. ....	Ilabeybury ....	Temiskaming Mining Division .....	1915, May 8.	1,900 00	
McQuire, H. F. ....	Parry Sound ....	Parry Sound Mining Division .....	1906, Sept. 26.	500 00	
Sheppard, H. E. ....	Elk Lake .....	Gowganda Mining Division .....	1909, Feb. 10.	1,100 00	
Spry, W. L. ....	Kenora .....	Kenora Mining Division .....	1909, Sept. 21.	1,050 00	
<i>Emigration Agents.</i>					
Sims, Brig-General					
R. F. M. ....	London .....	England .....	1918, Dec. 3.	6,500 00	
Clark, J. M. ....	do .....	do .....	1913, Mar. 17.	3,500 00	

D. GEO. ROSS,

Accountant.

ALBERT GRIGG,

Deputy Minister of Lands and Forests.



*Appendix No. 3.*

Statement of Lands Sold and Leased. Amount of Sales and Leases and Amount of Collections for the year ending October 31st, 1919.

Service.	Acres sold and leased.	Amount of sales and leases.	Collection on sales and leases.
		\$ c.	\$ c.
<i>Lands Sold:</i>			
Agricultural and Townsites.....	49,704.32	48,119 74	79,841 77
Mining .....	10,600.28	28,350 01	28,510 54
Clergy Lands .....			487 70
Common School Lands .....	72.33	109 87	7,984 02
Grammar School Lands .....			627 54
University Lands .....	119.50	59 75	2,064 40
<i>Lands Leased:</i>			
Mining .....	2,137.21	1,562 99	14,270 78
Crown .....	8,815.06	2,094 25	64,950 00
Temagami .....	5.35	70 00	1,074 15
	71,454.05	80,366 61	199,810 90

D. GEO. ROSS,  
Accountant.

ALBERT GRIGG,  
Deputy Minister of Lands and Forests.

## Appendix No. 4.

Statement of Revenue of the Department of Lands, Forests and Mines for the year ending  
October 31st, 1919.

Service.	\$	c.	\$	c.	\$	c.
<b>LAND COLLECTIONS.</b>						
<i>Crown Lands:</i>						
Agricultural .....	74,799	49				
Townsites .....	5,042	28				
			79,841	77		
Mining Sales .....			28,510	54		
Clergy Lands.....	487	70				
Common School Lands .....	7,984	02				
Grammar School Lands .....	627	54				
University Lands .....	2,064	40				
			11,163	66		
<i>Rent:</i>					119,515	97
Mining Leases .....	14,270	78				
Temagami Leases .....	1,074	15				
			15,344	93		
Crown Leases .....	25,894	27				
Sand and Gravel Royalty .....	25,218	16				
“ “ Rentals.....	3,479	47				
Water Powers .....	9,388	85				
Algonquin Provincial Park.....	969	25				
			64,950	00		
					80,294	93
Miners' Licenses .....	27,178	55				
Permits .....	1,697	25				
Recording Fees .....	35,087	10				
			63,962	90		
<i>Supplementary Revenue:</i>						
Acreage Tax .....	33,126	34				
Profit Tax .....	553,027	15				
Gas Tax .....	38,797	71				
Gas License .....	1,370	00				
			626,321	20		
					690,284	10
<b>WOODS AND FORESTS.</b>						
Bonus .....			872,598	69		
Timber Dues .....			662,928	30		
Ground Rent .....			87,682	52		
Transfer Fees .....			5,205	00		
Fire Protection .....			174,666	85		
					1,803,081	36
Provincial Assay Fees.....	729	60				
Casual Fees .....	1,172	53				
Cullers' Fees .....	538	50				
Forest Reserves Guides' Fees .....	50	00				
			2,490	63		
Algonquin Provincial Park.....			29,484	44		
					31,975	07
<b>REFUNDS.</b>						
Forest Ranging.....			24,324	32		
Fire Ranging .....			4,202	65		
War Relief .....			840	00		
Emigration Work, Great Britain .....			462	07		
Fuel Investigation.....			348	41		
Explorations and Investigations.....			153	50		
Agents' Salaries .....			85	00		
Quetico Provincial Park .....			82	00		
Contingencies .....			46	90		
Forest Reserves.....			40	00		
					30,584	85
					2,755,736	28

D. GEO. ROSS,  
Accountant.ALBERT GRIGG,  
Deputy Minister of Lands and Forests.

*Appendix No. 5.*

Statement of Receipts of the Department of Lands, Forests and Mines for the year ending October 31st, 1919, which are considered as Special Funds.

Service.	\$	c.	\$	c.
<i>Clergy Lands.</i>				
Principal .....	254	80		
Interest .....	232	90		
			487	70
<i>Common School Lands.</i>				
Principal .....	4,515	87		
Interest .....	3,468	15		
			7,984	02
<i>Grammar School Lands.</i>				
Principal .....	360	28		
Interest .....	267	26		
			627	54
<i>University Lands.</i>				
Principal .....	1,424	20		
Interest .....	640	20		
			2,064	40
			11,163	66

D. GEO. ROSS,  
Accountant.

ALBERT GRIGG,  
Deputy Minister of Lands and Forests.



*Appendix No. 6.*

Statement of Disbursements of the Department of Lands, Forests and Mines, for the year ending October 31st, 1919.

Service.	\$	c.	\$	c.	\$	c.
AGENTS' SALARIES AND DISBURSEMENTS.						
<i>Land, \$18,915.79.</i>						
Anderson, T. V. ....	633	32				
Disbursements .....	66	00				
			699	32		
Arthurs, E. ....			200	00		
Baker, R. H. ....			350	00		
Bolger, J. W. ....	916	66				
Disbursements .....	206	39				
			1,123	05		
Both, C. ....			200	00		
Brown, John ....	500	00				
Disbursements .....	43	98				
			543	98		
Burrows, W. A. ....	1,000	00				
Disbursements .....	365	20				
			1,365	20		
Cameron, W. ....	500	00				
Disbursements .....	43	00				
			543	00		
Campbell, Miss I. M. ....	500	00				
Disbursements .....	15	00				
			515	00		
Dempsey, S. J. ....	1,000	00				
Disbursements .....	73	50				
			1,073	50		
Dodds, T. ....	500	00				
Disbursements .....	4	00				
			504	00		
Douglas, W. J. ....	500	00				
Disbursements .....	36	40				
			536	40		
Ellis, H. J. ....			500	00		
Freeborn, J. S. ....	500	00				
Disbursements .....	18	00				
			518	00		
Gibson, J. E. ....	816	67				
Disbursements .....	158	85				
			975	52		
Ginn, F. E. ....	916	66				
Disbursements .....	81	90				
			998	56		
Hales, W. ....	250	00				
Disbursements .....	4	90				
			254	90		
Hollands, C. J. ....			300	00		
Jenkin, W. ....	291	00				
Disbursements .....	6	26				
			297	26		
McFayden, A. ....	600	00				
Disbursements .....	42	77				
			642	77		
MacLennan, J. K. ....			700	00		
Carried forward .....			12,840	46		

*Appendix No. 6.—Continued.*

Service.	\$	c.	\$	c.	\$	c.
<i>Brought forward</i> .....			12,840	46		
<b>AGENTS' SALARIES AND DISBURSEMENTS—Continued.</b>						
<i>Land—Concluded.</i>						
Noble, E. ....			300	00		
Parsons, W. J. ....	716	32				
Disbursements .....	176	50				
Phillion, J. A. ....	500	00	892	82		
Disbursements .....	23	67				
Prince, A. ....	500	00	523	67		
Disbursements .....	30	00				
Small, R. ....	500	00	530	00		
Disbursements .....	29	00				
Spry, W. L. ....	600	00	529	00		
Disbursements .....	488	80				
Thaw, D. ....	166	00	1,088	80		
Disbursements .....	2	87				
Teasdale, R. A. ....			168	87		
Watt, F. ....			500	00		
Whybourne, W. E. ....	300	00	300	00		
Disbursements .....	4	10				
Wilson, A. N. ....	175	00	304	10		
Disbursements .....	7	75				
Woollings, J. ....	716	32	182	75		
Disbursements .....	39	00				
<i>Homestead Inspectors, \$16,934.76.</i>			755	32		
Barr, J. ....	1,200	00				
Disbursements .....	792	90	1,992	90		
Bastien, J. A. ....	916	66				
Disbursements .....	235	25	1,151	91		
Brown, J. B. ....	1,000	00	1,311	35		
Disbursements .....	311	35				
Burnes, C. W. ....	1,000	00	1,349	68		
Disbursements .....	349	68				
Cragg, W. V. ....	1,200	00	1,533	63		
Disbursements .....	333	63				
Dean, T. ....	800	00	986	65		
Disbursements .....	186	65				
Hughes, T. ....	1,000	00	1,433	30		
Disbursements .....	433	30				
Owens, H. B. ....	838	48	1,753	23		
Disbursements .....	914	75				
<i>Carried forward</i> .....			30,428	44		

*Appendix No. 6.—Continued.*

Service.	\$	c.	\$	c.	\$	c.
<i>Brought forward</i> .....	30,428	44				
<b>AGENTS' SALARIES AND DISBURSEMENTS—Continued.</b>						
<i>Homestead Inspectors—Concluded.</i>						
Smith, D. ....	1,500	00				
Disbursements .....	418	11				
			1,918	11		
Watson, T. P. ....	1,200	00				
Disbursements .....	614	75				
			1,814	75		
Wigle, R. G. ....	1,200	00				
Disbursements .....	489	25				
			1,689	25		
<i>Timber, \$31,580.81.</i>						
Bremner, G. ....	1,800	00				
Disbursements .....	440	38				
			2,240	38		
Christie, W. P. ....	1,616	00				
Disbursements .....	347	80				
			1,963	80		
Hawkins, S. J. ....	1,616	00				
Disbursements .....	351	15				
			1,967	15		
Henderson, C. ....	2,018	67				
Webster, W. A., Assistant .....	210	00				
Disbursements .....	419	21				
			2,647	88		
Huckson, A. H. ....	1,800	00				
Disbursements .....	750	78				
			2,550	78		
Jones, W. M. ....	1,442	30				
McDonald, A., Assistant .....	1,500	00				
Watts, G. ....	57	70				
Disbursements .....	242	55				
			3,242	55		
MacDonald, S. C. ....	1,700	00				
Disbursements .....	198	33				
			1,898	33		
Margach, W. ....	1,600	00				
Legris, J., Assistant .....	1,600	00				
Cunningham, Mrs. E. A., Stenographer .....	442	75				
Gamble, Miss V., Stenographer .....	24	75				
Disbursements .....	524	37				
			4,191	87		
McDonald, H. ....	1,500	00				
Disbursements .....	215	55				
			1,715	55		
McDougall, J. T. ....	1,716	67				
Disbursements .....	416	26				
			2,132	93		
Oliver, J. A. ....	1,724	83				
Campbell, Miss M., Stenographer .....	119	23				
Godfrey, Miss S., Stenographer .....	530	93				
Disbursements .....	565	80				
			2,940	79		
Stevenson, A. ....	1,500	00				
Disbursements .....	373	40				
			1,873	40		
<i>Carried forward</i> .....			65,215	96		



*Appendix No. 6.—Continued.*

Service.	\$ c.	\$ c.	\$ c.
<i>Brought forward</i> .....		65,215 96	
AGENTS' SALARIES AND DISBURSEMENTS— <i>Concluded.</i>			
<i>Timber—Concluded.</i>			
Whelan, P. J., disbursements .....		442 59	
Wood, W. G. A. ....	1,400 00		
Disbursements .....	372 81	1,772 81	
<i>Miscellaneous, \$1,562.20.</i>			
Green, H. P., Caretaker, Islands in Charlston Lake .....		50 00	
Jamieson, W. H., Caretaker, Islands in Dog and Laboria Lakes .....		50 00	
McArthur, T. A., Inspector of Agencies .....	750 00		
Disbursements .....	712 20	1,462 20	
OTTAWA AGENCY.			68,993 56
Darby, E. J., Agent .....		1,500 00	
Larose, S. C., Clerk .....		1,000 00	
Rent .....	700 00		
Disbursements .....	40 55	740 55	
CULLERS' ACT.			3,240 55
Greer, Wm. ....	12 00		
Disbursements .....	3 60		
Jones, W. M. ....		15 60	
Disbursements .....		35 70	
Oliver, J. A. ....		9 66	
Disbursements .....			60 96
FIRE RANGING .....			528,734 64
FOREST RANGING .....			140,338 50
FOREST RESERVES .....			6,140 25
SALARIES, WAGES AND EXPENSES OF MEN, RE RE-FORESTATION .....			6,923 56
PURCHASE, CARE AND FEED OF HORSES, AND PURCHASE OF SEED, NURSERY STOCK, FERTILIZER AND NURSERY EQUIPMENT .....			2,316 63
PURCHASING OPTIONS AND RENTALS OF LAND .....			90 00
INVESTIGATION IN REFORESTATION .....			5,465 17
ALLOWANCE TO SCHOOL SECTION IN TOWNSHIP OF SOUTH WALSINGHAM .....			150 00
CARE AND MAINTENANCE OF BUILDINGS .....			59 46
INVESTIGATION OF FOREST TREE DISEASES .....			5,651 77
SURVEYS .....			128,823 25
<i>Carried forward</i> .....			896,988 30

*Appendix No. 6.—Continued.*

Service.	\$	c.	\$	c.	\$	c.
<i>Brought forward</i> .....					896,988	30
BOARD OF SURVEYORS .....					200	00
COLONIZATION ROADS .....					390,621	54
ANNUAL MEMBERSHIP FEES .....					49	93
WORKMEN'S COMPENSATION .....					150	00
INSURANCE .....					711	73
MISCELLANEOUS .....					117	86
UNFORESEEN AND UNPROVIDED .....					370	92
GRANT TO CANADIAN FORESTRY ASSOCIATION .....					1,000	00
REFUNDS (Miscellaneous) .....					3,201	33
COLONIZATION AND IMMIGRATION.						
PRINTING, ADVERTISING, ETC. ....					21,351	13
LAND GUIDES .....					254	00
EMIGRATION WORK IN GREAT BRITAIN .....					34,052	07
WAR RELIEF .....					2,544	07
WOMEN'S WELCOME HOSTEL .....					1,400	00
WOMEN'S HOSTEL AND TRAVELLERS' AID, OTTAWA...					500	00
GRANT TO BRIGADIER-GENERAL R. F. M. SIMS .....					5,000	00
RENTAL IMMIGRATION OFFICE .....					572	15
PURCHASE AND DISTRIBUTION OF FILMS AND MOVING PICTURE MACHINES .....					4,543	95
ALLOWANCE TO J. M. CLARK .....					350	00
MINES AND MINING.						
Miller, W. G., Provincial Geologist, services .....	5,000	00				
Disbursements .....	130	36				
			5,130	36		
Knight, C. W., 1st Assistant Geologist, services ..	3,000	00				
Disbursements .....	1,611	21				
			4,611	21		
Burrows, A. G., 2nd Assistant Geologist, services.	2,850	00				
Disbursements .....	546	33				
			3,396	33		
Hopkins, P. E., 3rd Assistant Geologist, services.	2,400	00				
Disbursements .....	524	63				
			2,924	63		
Rogers, W. R., Topographer, services .....	2,500	00				
Disbursements .....	952	45				
			3,452	45		
Bell, W. J., Cartographer, services .....			1,350	00		
Mickle, G. R., Mine Assessor, services .....	4,400	00				
Disbursements .....	245	40				
			4,645	40		
<i>Carried forward</i> .....			25,510	38	1,363,978	98

*Appendix No. 6.—Continued.*

Service.	\$ c.	\$ c.	\$ c.
<i>Brought forward</i> .....		25,510 38	1,363,978 98
<i>MINES AND MINING—Continued.</i>			
Godson, T. E., Mining Commissioner, services ...	5,000 00		
Morris, W. H., Mining Commissioner's Clerk, services .....	1,850 00		
White, Miss N., Stenographer .....	811 84		
Booth, Miss E., do .....	98 67		
Disbursements .....	687 74	8,448 25	
Sutherland, T. F., Chief Inspector of Mines, services .....	3,800 00		
Disbursements .....	1,292 29	5,092 29	
Collins, E. A., 1st Assistant Inspector of Mines, services for one month. Resigned .....		125 00	
Brown, A. H., 1st Assistant Inspector of Mines, services for nine months. Died .....	2,250 00		
Disbursements .....	361 10	2,611 10	
McMillan, J. G., 2nd Assistant Inspector of Mines, services .....	2,546 28		
Disbursements .....	182 85	2,729 13	
Bartlett, J., 3rd Assistant Inspector of Mines, services .....	2,817 00		
Disbursements .....	1,353 32	4,170 32	
Webster, A. R., 4th Assistant Inspector of Mines, services .....	3,000 00		
Disbursements .....	1,359 90	4,359 90	
Jackson, P. A., Surveyor, services .....	1,700 00		
Disbursements .....	310 19	2,010 19	
Estlin, E. S., Natural Gas Commissioner, services	3,600 00		
Beno, J. W., Inspector Gas and Oil Wells, services	755 73		
Scott, J., Inspector Gas and Oil Wells, services..	937 48		
Near, A. E., Inspector Gas and Oil Wells, services	937 48		
Burn, B. D., Natural Gas Inspector, services .....	427 88		
Estlin, Miss M., Stenographer .....	234 62		
Estlin, Miss E. M., do .....	530 76		
Estling, H., services .....	18 00		
Disbursements .....	3,480 39	10,922 34	
McArthur, T. A., Inspector of Recorders' Offices, services .....	900 00		
Disbursements .....	552 66	1,452 66	
Burwash, Dr. E. M., services .....	558 65		
Disbursements .....	999 10	1,557 75	
Carlyle, A. W., services .....	199 23		
Disbursements .....	15 95	215 18	
Connors, F. J., services .....		129 23	
Cross, J. G., services .....	875 00		
Disbursements .....	833 53	1,708 53	
Dingman, A. H., services .....		191 53	
<i>Carried forward</i> .....		71,233 78	1,363,978 98



*Appendix No. 6.—Continued.*

Service.	\$ c.	\$ c.	\$ c.
<i>Brought forward</i> .....		71,233 78	1,363,978 98
<i>MINES AND MINING—Concluded.</i>			
Elliot, G. R., services .....		233 08	
Fair, H. A., services .....		244 62	
Gibson, G. A. L., services .....	300 00		
Disbursements .....	204 85		
		504 85	
Heisey, K. B., services .....	136 16		
Disbursements .....	60 00		
		196 16	
Hunnisett, J. E., services .....		120 00	
Howell, Edwin, services .....		253 85	
Kerr-Lawson, D. E., services .....		199 42	
Kirkconnell, J. R., services .....		203 08	
Montgomery, R. W., services .....		191 53	
Parsons, Prof. A. L., services .....	713 46		
Disbursements .....	634 19		
		1,347 65	
Presgrave, R., services .....		233 08	
Stevens, Joseph, services .....		124 00	
Tyrrell, Geo., services .....		153 64	
Weelands, J. E., services .....		244 62	
Nicholas, F., preparing index .....		250 00	
King's Printer .....		1,111 52	
Express .....		47 57	
Telegraphing .....		177 60	
Typewriter repairs, etc. ....		12 00	
Sundries .....		226 24	
			77,308 29
<i>MINING RECORDERS.</i>			
Campbell, C. A., Recorder .....	1,219 24		
Loudon, W. E., Travelling Draughtsman .....	330 77		
LeClair, Miss H., Stenographer .....	437 50		
Disbursements .....	371 05		
		2,358 56	
Gauthier, G. H., Recorder .....	1,500 00		
O'Brien, J. D., Clerk .....	1,138 80		
Disbursements .....	1,153 49		
		3,792 29	
Hough, J. A., Recorder .....	1,457 73		
Ginn, H. G., Clerk .....	641 00		
Loudon, W. E., Travelling Draughtsman .....	276 92		
Matchett, Miss F., Stenographer .....	135 00		
Robertson, Miss M., do .....	127 69		
Disbursements .....	270 30		
		2,908 64	
Miller, N., Recorder .....	1,138 48		
Disbursements .....	227 45		
		1,365 93	
Morgan, J. W., Recorder .....	1,140 48		
McDonald, Mrs. M. M., Acting Recorder .....	256 73		
Disbursements .....	384 73		
		1,781 94	
McAulay, N. J., Recorder .....	1,900 00		
Sarsfield, J. M., Clerk .....	1,318 24		
Munro, Miss E., Stenographer .....	796 74		
Disbursements .....	772 77		
		4,787 75	
McQuire, H. F., Recorder .....	500 00		
Disbursements .....	157 05		
		657 05	
<i>Carried forward</i> .....		17,652 16	1,441,287 27

*Appendix No. 6.—Continued.*

Service.	\$ c.	\$ c.	\$ c.
<i>Brought forward</i> .....		17,652 16	1,441,287 27
MINING RECORDERS— <i>Concluded.</i>			
Sheppard, H. E., Recorder .....	550 00		
Disbursements .....	165 03	715 03	
Morgan, M. R., Recorder .....	541 50		
Loudon, W. E., Travelling Draughtsman .....	359 62		
Disbursements .....	180 05	1,081 17	
Spry, W. L., Recorder .....	956 73		
Disbursements .....	215 40	1,172 13	
Ginn, H. G., Recorder .....	477 24		
Loudon, W. E., Travelling Draughtsman .....	112 49		
Matchett, Miss F., Stenographer .....	357 50		
Disbursements .....	2,324 05	3,271 28	
Express .....	86 40		
King's Printer .....	686 57		
Telegraphing .....	6 53		
Typewriter repairs, etc. ....	10 35	789 85	
			24,681 62
PROVINCIAL ASSAY OFFICE.			
McNeill, W. K. ....	2,456 73		
Disbursements .....	49 55	2,506 28	
Rothwell, T. E. ....	1,736 48		
Disbursements .....	100 55	1,837 03	
Leat, Arthur .....		556 00	
Supplies .....	896 99		
Disbursements .....	278 91	1,175 90	
			6,075 21
MINERAL DISPLAY AT EXHIBITIONS.			
Johns, Chas., Services <i>re</i> Toronto Exhibition ....		31 50	
McCarthy, C. P., Services <i>re</i> Toronto Exhibition..	150 50		
Disbursements .....	69 80	220 30	
West, W. J., Services <i>re</i> Toronto Exhibition ....		66 00	
General Disbursements <i>re</i> Exhibitions .....		2,316 73	
			2,634 53
RESEARCH WORK .....			6 10
SOCIETY MEMBERSHIP FEES .....			243 89
EXPERIMENTAL TREATMENT OF ORES .....			2,085 43
SPECIAL SURVEYS IN MINING DISTRICTS .....			1,602 29
NATURAL GAS ADVISORY BOARD .....			6,460 13
CONTINGENCIES.			
<i>Departmental.</i>			
Printing and Binding .....	1,166 21		
Stationery .....	7,066 65	8,232 86	
<i>Carried forward</i> .....		8,232 86	1,485,076 47

*Appendix No. 6.—Continued.*

Service.	\$ c.	\$ c.	\$ c.
<i>Brought forward</i> .....		8,232 86	12,485,076 47
CONTINGENCIES— <i>Continued.</i>			
Departmental— <i>Concluded.</i>			
Express .....	258 68		
Postage .....	1,519 97	1,778 65	
Telegraphing .....	682 38		
Car Fare .....	60 00	742 38	
Subscriptions .....	331 23		
Advertising .....	3,675 55	4,006 78	
Typewriters, repairs, etc. ....		382 50	
Bindon, F. W., travelling expenses .....	50 00		
Cain, W. C., travelling expenses .....	246 15		
Carrell, W., travelling expenses .....	11 27		
Ferguson, Hon. G. H., travelling expenses .....	1,000 00		
Grigg, A., travelling expenses .....	58 85		
Hele, C. C., travelling expenses .....	255 58		
Hutcheon, J., travelling expenses .....	498 81		
Keefer, F. H., Services <i>re</i> Level of Lake of the Woods .....	1,503 00		
Robbins, H. M., travelling expenses .....	44 30		
Rorke, L. V., travelling expenses .....	140 55		
Work, J., travelling expenses .....	129 75	3,938 26	
Extra Clerks .....	9,278 79		
Maps .....	2,200 80		
Sundries .....	741 35	12,220 94	
<i>Bureau of Mines.</i>			31,302 37
Printing and Binding .....	2,594 72		
Stationery .....	4,483 55	7,078 27	
Postage .....	822 05		
Telegraphing .....	118 38		
Express and Cartage .....	21 60		
Advertising .....	2,205 14		
Subscriptions .....	324 02	3,491 19	
Typewriters, repairs, etc. ....	208 40		
Gibson, T. W., travelling expenses .....	124 07		
Boogers, L. H., translations .....	37 80		
Douglas, D. S., compiling index .....	100 00		
George, H., rock sections .....	62 30		
Stewart, W. A., rock sections .....	6 00		
Royal Ontario Museum, rock sections .....	3 00		
Work, J., services .....	150 00	691 57	
Extra Clerks .....	1,432 44		
Sundries .....	38 44	1,470 88	
<i>Forestry.</i>			12,731 91
Printing and Binding .....	190 90		
Stationery .....	382 11	573 01	
<i>Carried forward</i> .....		573 01	1,529,110



*Appendix No. 6.—Continued.*

Service.	\$ c.	\$ c.	\$ c.
<i>Brought forward</i> .....		573 01	1,529,110 75
CONTINGENCIES— <i>Concluded.</i>			
FORESTRY— <i>Concluded.</i>			
Zavitz, E. J., travelling expenses .....	224 08		
White, J. H., travelling expenses .....	34 45		
		258 53	
Postage .....	250 00		
Telegraphing .....	14 57		
Express and Cartage .....	15 15		
Typewriters, repairs, etc. ....	19 00		
Supplies .....	51 08		
Sundries .....	243 95		
		593 75	
<i>Colonization.</i>			1,425 29
Printing and Binding .....	34 08		
Stationery .....	353 89		
		387 97	
Postage .....	350 49		
Express .....	236 59		
		587 08	
Telegraphing .....	285 21		
Subscriptions .....	49 36		
Typewriter repairs, etc. ....	29 25		
		363 82	
Bindon, F. W., travelling expenses .....	24 50		
Argue, J., travelling expenses .....	25 25		
Jones, R. A., travelling expenses .....	332 15		
Macdonell, H. A., travelling expenses .....	258 92		
McGillivray, A. D., travelling expenses .....	64 35		
Tutt, H., travelling expenses .....	4 19		
Sundries .....	52 02		
		761 38	2,100 25
<i>Colonization Roads.</i>			
Printing and Binding .....	448 07		
Stationery .....	418 89		
		866 96	
Postage .....	248 82		
Express .....	4 64		
		253 46	
Telegraphing .....	49 00		
Subscriptions .....	6 50		
Typewriters, repairs, etc. ....	317 50		
		373 00	
Fullerton, C. H., travelling expenses .....	511 02		
Meador, C. H., travelling expenses .....	589 15		
		1,100 17	
Extra Clerks .....	1,485 00		
Sundries .....	52 05		
		1,537 05	4,130 64
			1,536,766 93

*Appendix No. 7.*

Statement of expenses on account of various services under the direction of the Department of Lands, Forests and Mines for the year ending October 31st, 1919.

Service.	\$	c.
ALGONQUIN PROVINCIAL PARK .....	31,223	76
QUETICO PROVINCIAL PARK .....	11,291	69
FUEL INVESTIGATION .....	118,089	55
ROYAL NICKEL COMMISSION .....	46	85
VETERANS' COMMUTATION .....	150	00
LEGAL INVESTIGATIONS .....	2,171	50
FUEL PROBLEM .....	15,000	00
	177,973	35

D. GEO. ROSS,  
Accountant.

ALBERT GRIGG,  
Deputy Minister of Lands and Forests.

*Appendix No. 8.*

## PATENTS OFFICE.

Statement of Patents, etc., issued from 1st November, 1918, to 31st October, 1919.

Public Lands (late Crown) .....	514
“ “ (late School) .....	32
“ “ (late Clergy) .....	4
“ “ (University) .....	8
Free Grant Lands (Act of 1913) .....	292
“ “ “ (Act of 1901) Veterans .....	68
Mining Lands (Patents) .....	310
“ “ (Leases) .....	67
Crown Leases .....	13
Licenses of Occupation .....	51
Temagami Island Leases .....	4
Sand and Gravel Licenses .....	12
Quarry Claims .....	3
Pine Patents .....	6
Orders-in-Council .....	10
Total .....	1,394

CHARLES S. JONES,  
Clerk of Patents.

ALBERT GRIGG,  
Deputy Minister Lands and Forests.

W. C. CAIN,  
Chief Clerk.

Appendix

WOODS AND

Statement of Timber and Amounts accrued from Timber Dues, Ground

QUANTITY AND

Agencies.	Area covered by timber licenses.	Saw logs.				Boom and	
		Pine.		Other.		Pine.	
	Square miles.	Pieces.	Feet B.M.	Pieces.	Feet B.M.	Pieces.	Feet B.M.
Western Timber District .....	11,700½	4,979,650	174,165,661	793,696	23,476,842	46,321	5,353,802
Belleville Timber District .....	657¼	5,661	315,899	100,600	3,349,668	43	5,639
Ottawa Timber District .....	3,873¼	328,997	11,662,880	319,253	9,439,867	3,952	356,888
	16,231	5,314,308	186,144,440	1,213,549	36,266,377	50,316	5,716,329

General Statement

Agencies.	Tan Bark.	Railway Ties.	Posts.	Poles.	Bolts.	Pulp-wood.		
	Cords.	Pieces.	Pieces.	Pieces.	Cords.	Cords.	Transfer Fees.	Interest.
Western Timber District .....	1,633	5,131,073	44,853	12,806	1,196	304,017	\$ 5,095 00	\$ 27,108 86
Belleville Timber District .....	329	3,397	5,562	20	.....	450	.....	.....
Ottawa Timber District.....	946	6,184	429	2,347	.....	15,728	110 00	127 13
	2,908	5,140,654	50,844	15,173	1,196	320,195	5,205 00	27,235 99

JOHN HOUSER,  
Chief Clerk in charge.



No. 9.

## FORESTS.

Rent and Bonus during the year ending 31st October, 1919.

## DESCRIPTION OF TIMBER.

Dimension.		Square Timber.		Piling.			Pine.		Cordwood.	
Other.									Hard.	Soft.
Pieces.	Feet B.M.	Pieces.	Cubic Feet.	Lineal feet.	Pieces	Feet B.M.	Pieces	Lineal Feet.	Cords.	Cords.
9,517	1,070,460	1,131	70,287	197,233	3,415	343,399	596	17,960	22,595	45,141
1,440	258,266	.....	.....	.....	.....	.....	.....	.....	216	.....
4,205	466,489	.....	.....	.....	.....	.....	.....	.....	1,500	5,424
15,162	1,795,215	1,131	70,287	197,233	3,415	343,399	596	17,960	24,311	50,565

of Timber.—Concluded.

## Amounts accrued.

Trespass.	Timber dues.	Bonus.	Deposit timber sales.	Ground rent.	Fire protection.	Total.
\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.
23,863 60	883,668 03	597,062 77	438,115 00	63,978 25	143,758 85	2,182,650 36
4,988 18	2,997 90	154 68	.....	3,360 00	4,603 80	16,104 56
556 93	32,455 58	.....	.....	20,250 00	26,304 20	79,803 84
29,408 71	919,121 51	597,217 45	*438,115 00	*87,588 25	*174,666 85	2,278,558 76

\* Amount actually received.

ALBERT GRIGG,  
Deputy Minister.

## Appendix No. 10.

## WOODS AND FORESTS BRANCH.

Statement of Revenue collected during the year ending October 31st, 1919.

Amount of Western Collections at Department .....	\$1,733,550 52
do Belleville Collections at Department .....	10,582 26
do Ottawa Collections at Department .....	58,948 58
	<hr/>
	\$1,803,081 36

## WOODS AND FORESTS.

Bonus.....	\$872,598 69
Timber dues .....	662,928 30
Ground rent .....	87,682 52
Transfer fees .....	5,205 00
Fire protection .....	174,666 85
	<hr/>
	\$1,803,081 36

## WOODS AND FORESTS BRANCH REVENUE,

October 31st, 1919.

## WESTERN DISTRICT—

Timber dues .....	\$621,318 02
Bonus.....	434,176 54
Ground rent .....	63,978 25
Interest on dues .....	27,069 38
Interest on ground rent .....	39 48
Transfer fees .....	5,095 00
Timber sale deposit .....	438,115 00
Fire protection .....	143,758 85
	<hr/>
	\$1,733,550 52

## OTTAWA DISTRICT—

Timber dues .....	\$12,157 25
Ground rent .....	20,250 00
Interest on dues .....	72 34
Interest on ground rent .....	54 79
Transfer fees .....	110 00
Fire protection .....	26,304 20
	<hr/>
	\$58,948 58

## BELLEVILLE DISTRICT—

Timber dues .....	\$2,311 31
Bonus.....	307 15
Ground rent .....	3,360 00
Fire protection .....	4,603 80
	<hr/>
	10,582 26
	<hr/>
	\$1,803,081 36

JOHN HOUSER,  
Chief Clerk in Charge.

ALBERT GRIGG,  
Deputy Minister.

Appendix No. 11.

Statement of work done in the Military Office, Lands Branch of the Department of Lands and Forests, during the year ending October 31st, 1919.

Reference for Veterans' Patents issued .....	34
Locations under military certificates .....	45
Certificates applied in payment of lands .....	6
Certificates surrendered for commutation money .....	3
Letters received .....	1,572
Letters written .....	1,869
Special letters to agents .....	200
Special letters to mining recorders .....	260
Maps and reports supplied to veterans .....	150
Printed forms sent out .....	90
Copies of Veteran Act supplied .....	27

H. E. JOHNSTON,  
Military Clerk.

ALBERT GRIGG,  
Deputy Minister.

W. C. CAIN,  
Chief Clerk in Charge.

Appendix No. 12.

Memorandum of parties who passed the Cullers' Examination of 1919.

Acheson, Lloyd, Box 1792, North Bay, Ontario, examined at North Bay, October 8th, 1919, licensed October 14th, 1919.

Mantel, Ross, Milnet, Ontario, examined at North Bay, October 8th, 1919, licensed October 14th, 1919.

McCool, Lawrence, Sudbury, Ontario, examined at North Bay, October 8th, 1919, licensed October 14th, 1919.

McGregor, W. H., Sturgeon Falls, Ontario, examined at North Bay, October 8th, 1919, licensed October 14th, 1919.

JOHN HOUSER,  
Chief Clerk in Charge.

ALBERT GRIGG,  
Deputy Minister.



*Appendix No. 13.*

## RECORD BRANCH, 1918-19.

*Communications received:*

From Crown Lands Agents .....	7,183
“ Mining Recorders .....	3,476
“ Crown Timber Agents .....	4,389
“ Homestead Inspectors .....	1,527
“ Superintendent, Algonquin Park .....	460
“ Superintendent, Quetico Park .....	112
Orders-in-Council .....	297
Telegrams .....	398
Soldiers and Sailors (letters) .....	526
Nickel Commission .....	(Figures supplied by them) 800
Northern Development Branch .....	“ “ “ 8,367
Colonization Branch .....	“ “ “ 9,381
Loan Commissioner .....	“ “ “ 2,767
Mining Commissioner .....	“ “ “ 3,123
Forestry Branch .....	“ “ “ 13,134
Mine Assessor .....	“ “ “ 1,826
Mine Inspector .....	“ “ “ 818
Provincial Geologist .....	“ “ “ 472
Colonization Roads (since May 14th, 1919) .....	“ “ “ 3,529
All other sources .....	28,060
Total incoming (Minister's office not included) .....	90,645

*Communications sent out:*

To Crown Agents, Inspectors, Rangers and Park Superintendents .....	18,872
“ General Public .....	22,340
“ Circular Letters (timber sales) .....	3,210
Maps and blue prints .....	3,606
Mining Reports to foreign countries .....	580
Mining Reports to United States and other countries .....	3,000
Mining Acts .....	2,200
Nickel Commission (letters) .....	(Figures supplied by them) 600
Nickel Commission (reports) .....	“ “ “ 450
Northern Development Branch (letters) .....	“ “ “ 6,715
Northern Development Branch (seed grain) .....	“ “ “ 1,509
Colonization Branch (letters) .....	“ “ “ 7,781
Colonization Branch (Northern Ontario literature) .....	“ “ “ 28,568
Colonization Branch (Ontario maps) .....	“ “ “ 7,177
Loan Commissioner .....	4,955
Mining Commissioner (letters) .....	7,067
Mining Commissioner (orders) .....	878
Forestry Branch (letters) .....	6,504
Forestry Branch (circulars) .....	2,300
Forestry Branch (parcels by post) .....	810
Mine Assessor .....	1,865
Mine Inspector .....	711
Provincial Geologist .....	318
Colonization Roads (since May 14th, 1919) .....	2,906
Total outgoing (Minister's office not included) .....	134,922

*Postage:*

Postage for the year, Records Branch .....	\$2,975 20
“ “ “ Colonization Branch .....	306 12
“ “ “ Loan Commissioner .....	180 00
“ “ “ Forestry Branch .....	350 00
“ “ “ Colonization Roads (since May 14th) .....	153 40

*Files:*

New files issued, general .....	4,623
“ “ “ accounts chargeable .....	549
“ “ “ accounts free .....	175

S. K. BURDIN,  
Chief Clerk, Records Branch.

ALBERT GRIGG,  
Deputy Minister.

## Appendix No. 14.

Statement showing the number of Locatees and of acres located; of purchasers and of acres sold; of lots resumed for non-performance of the settlement duties and of patents issued in Free Grant Townships during the year ending 31st October, 1919.

Township.	District or County.	Agent.	No. of persons located.	No. of acres located.	No. of purchasers.	No. of acres sold.	No. of persons cancelled.	No. of acres resumed.	No. of patents issued.	No. of acres patented.
Baxter .....	Muskoka. ....	J. B. Brown, Brace-	2	281	1	3	1	201	3	277
Brunel .....	"	" bridge	1	201	1	1	1	201	1	201
Cardwell .....	"	"	4	652	.....	.....	2	380	2	352½
Chaffey .....	"	"	2	298	.....	.....	3	298	1	200
Draper .....	"	"	.....	.....	.....	.....	.....	.....	1	95
Franklin .....	"	"	1	95	1	3	1	95	4	208
Freeman .....	"	"	1	100	1	25	.....	.....	3	200
Macaulay .....	"	"	2	164	.....	.....	1	64	.....	.....
Medora .....	"	"	3	203	.....	.....	1	203	.....	.....
Monck .....	"	"	.....	.....	.....	.....	.....	.....	.....	.....
Morrison .....	"	"	6	1,007	1	25 100	4	553	3	120
Muskoka .....	"	"	.....	.....	4	111	.....	.....	5	225
McLean .....	"	"	1	134	1	34	1	134	4	500
Oakley .....	"	"	2	185	1	3	1	85	3	280
Ridout .....	"	"	1	199	1	6	1	199	3	267
Ryde .....	"	"	5	701	.....	.....	4	601	.....	.....
Sherborne .....	"	"	2	145	1	14½	1	55	3	360
Sinclair .....	"	"	1	228	2	28	1	228	.....	.....
Stephenson .....	"	"	.....	.....	.....	.....	.....	.....	.....	.....
Stisted .....	"	"	2	287	.....	.....	1	100	1	200
Watt .....	"	"	3	309	1	1	2	200	4	220
Wood .....	"	"	3	479	4	17	5	779	6	675
Blair .....	Parry Sound.	Miss I. M. Campbell,	.....	.....	1	19	.....	.....	.....	.....
Burpee .....	"	" Parry Sound	.....	.....	.....	.....	.....	.....	.....	.....
Carling .....	"	"	5	654	3	205½	2	278	10	900
Christie .....	"	"	2	200	.....	.....	2	200	.....	.....
Conger .....	"	"	3	300	1	100	4	782	3	10
Cowper .....	"	"	.....	.....	.....	.....	.....	.....	1	4
Foley .....	"	"	.....	.....	.....	.....	.....	.....	1	20
Ferguson .....	"	"	3	306	.....	.....	2	200	.....	.....
Hagerman .....	"	"	1	202	.....	.....	.....	.....	.....	.....
Harrison .....	"	"	.....	.....	.....	.....	3	25½	13	85
Henvey .....	"	"	1	50	.....	.....	.....	.....	1	83½
Humphrey .....	"	"	.....	.....	.....	.....	.....	.....	.....	.....
McConkey .....	"	"	1	100	.....	.....	.....	.....	3	134
McDougall .....	"	"	1	100	1	83	1	100	1	83
McKellar .....	"	"	3	500	.....	.....	2	400	.....	.....
McKenzie .....	"	"	.....	.....	.....	.....	.....	.....	2	375
Monteith .....	"	"	8	1,152	.....	.....	5	717	1	254
Shawanaga .....	"	"	.....	.....	1	16	.....	.....	4	32
Wilson .....	"	"	3	386	1	3	1	98	1	200
Chapman .....	Parry Sound	Dr. J. S. Freeborn,	1	64	2	95	1	64	1	100
Croft .....	"	" Magnetawan	2	200	.....	.....	3	404	1	200
Ferrie .....	"	"	.....	.....	.....	.....	.....	.....	.....	.....
Gurd .....	"	"	3	273	1	2	3	276	3	402
Lount .....	"	"	2	300	.....	.....	2	300	.....	.....
Machar .....	"	"	1	196	.....	.....	1	99	6	860
Mills .....	"	"	1	100	.....	.....	.....	.....	.....	.....
Pringle .....	"	"	4	500	2	107	1	200	4	695

*Appendix No. 14.—Continued.*

Township.	District or County.	Agent.	No. of persons located.	No. of acres located.	No. of purchasers.	No. of acres sold.	No. of persons cancelled.	No. of acres resumed.	No. of patents issued.	No. of acres patented.
Ryerson.....	Parry Sound..	Dr. J. S. Freeborn, Magnetawan	.....	.....	1	100	.....	.....	4	479
Spence .....	"	"	.....	.....	.....	.....	.....	.....	1	200
Strong .....	"	"	1	100	.....	.....	2	299	4	480
Armour.....	Parry Sound..	David Thaw, Emsdale	.....	.....	1	8	.....	.....	2	300
Bethune .....	"	"	.....	.....	.....	.....	.....	.....	.....	.....
Joly .....	"	"	6	792	1	108	7	891	4	580
McMurrich ...	"	"	1	100	1	8	2	300	2	200
Perry .....	"	"	1	100	.....	.....	1	100	.....	.....
Proudfoot....	"	"	1	91	.....	.....	.....	.....	.....	.....
Hardy .....	Parry Sound..	H. J. Ellis, Powassan.	.....	.....	.....	.....	.....	.....	.....	.....
Himsworth ..	"	"	8	1,100	.....	.....	6	911	7	1,186
Laurier .....	"	"	4	603	.....	.....	3	500	1	100
Nipissing ....	"	"	3	483	.....	.....	2	326	4	325
Patterson....	"	"	.....	.....	.....	.....	.....	.....	1	186
Bonfield....	Nipissing ....	W. J. Parsons, North	6	768½	1	11	4	368½	4	330
Boulter .....	"	" Bay	3	350½	.....	.....	3	250½	1	200
Chisholm .....	"	"	14	1,666	2	14	11	1,132	5	685
Ferris .....	"	"	6	559	.....	.....	5	459	3	395
Anson .....	Haliburton ...	R. H. Baker, Minden..	1	182	.....	.....	1	182	1	100
Glamorgan ..	"	"	.....	.....	.....	.....	.....	.....	2	287
Hindon .....	"	"	.....	.....	.....	.....	.....	.....	1	98
Lutterworth..	"	"	.....	.....	.....	.....	.....	.....	1	160
Minden .....	"	"	.....	.....	.....	.....	1	100	.....	.....
Snowdon .....	"	"	.....	.....	.....	.....	.....	.....	.....	.....
Stanhope....	"	"	1	100	.....	.....	1	100	.....	.....
Anstruther ...	Peterborough.	William Hales, Apsley	1	98	.....	.....	.....	.....	.....	.....
Burleigh, N.D.	"	"	.....	.....	.....	.....	.....	.....	.....	.....
" S.D.	"	"	.....	.....	.....	.....	2	93	1	175
Chandos .....	"	"	1	110	.....	.....	.....	.....	1	174
Methuen .....	"	"	2	300	.....	.....	1	100	1	200
Cardiff.....	Haliburton ...	A. N. Wilson, Kinmount	3	388	1	122	4	392	4	450
Cavendish....	Peterborough.	"	3	348	4	62	2	224	.....	.....
Galway .....	"	"	1	125	1	17½	.....	.....	2	117½
Monmouth ...	Haliburton ...	"	4	333	1	7	5	420	3	369
Bangor .....	Hastings ....	W. J. Douglas, May-	3	268	.....	.....	2	189	.....	.....
Carlow .....	"	"nooth	1	199	.....	.....	1	100	4	277
Cashel .....	"	"	1	100	.....	.....	.....	.....	1	200
Dungannon ..	"	"	4	474½	.....	.....	1	88	.....	.....
Faraday .....	"	"	2	203	1	½	.....	.....	1	66
Herschel .....	"	"	6	639½	2	104	3	345	5	640
Limerick.....	"	"	1	200	1	5	2	300	1	100
Mayo .....	"	"	1	256	1	56	1	128	5	740
Monteagle ...	"	"	1	101	3	7	.....	.....	6	1,000
McClure .....	"	"	2	200	.....	.....	.....	.....	1	97
Wicklow .....	"	"	4	400	2	89	.....	.....	2	247
Wollaston....	"	"	.....	.....	.....	.....	1	195	.....	.....
Algona, S....	Renfrew.....	Adam Prince, Wilno...	1	100	.....	.....	.....	.....	.....	.....
Brougham .....	"	"	.....	.....	.....	.....	.....	.....	3	500
Brudenell....	"	"	6	590	.....	.....	4	362	1	200
Burns.....	"	"	.....	.....	1	2	.....	.....	2	56½

## Appendix No. 14.—Continued.

Township.	District or County.	Agent.	No. of persons located.	No. of acres located.	No. of purchasers.	No. of acres sold.	No. of persons cancelled.	No. of acres resumed.	No. of patents issued.	No. of acres patented.
Grattan .....	Renfrew .....	Adam Prince, Wilno...	.....	.....	2	128	.....	.....	2	128½
Griffith .....	"	"	2	150	.....	.....	.....	.....	.....	.....
Hagarty .....	"	"	.....	.....	.....	.....	.....	.....	1	50
Jones .....	"	"	2	143½	.....	.....	.....	.....	2	200
Lyell .....	"	"	3	250	.....	.....	2	205	.....	.....
Lyndoch .....	"	"	.....	.....	.....	.....	.....	.....	.....	.....
Matawatchan .....	"	"	1	100	.....	.....	1	100	2	260
Radcliffe .....	"	"	4	551	2	103	2	269	1	195
Raglan .....	"	"	3	283	.....	.....	3	410	2	325
Richards .....	"	"	6	797	.....	.....	4	401	4	400
Sebastopol .....	"	"	3	285	.....	.....	3	285	.....	.....
Sherwood .....	"	"	1	121	.....	.....	2	171	1	87
Algona, N. ....	Renfrew .....	Finlay Watt, Pembroke	.....	.....	.....	.....	.....	.....	1	100
Alice .....	"	"	.....	.....	.....	.....	.....	.....	5	475
Buchanan .....	"	"	7	817	2	82	.....	.....	2	200
Clara .....	"	"	3	461	1	57	.....	.....	.....	.....
Fraser .....	"	"	1	99	.....	.....	1	100	1	55
Head .....	"	"	2	196	.....	.....	1	100	1	165
Maria .....	"	"	.....	.....	.....	.....	.....	.....	.....	.....
McKay .....	"	"	.....	.....	.....	.....	.....	.....	.....	.....
Petawawa .....	"	"	5	472	.....	.....	3	301	2	200
Rolph .....	"	"	1	112	.....	.....	1	100	.....	.....
Wilberforce .....	"	"	.....	.....	.....	.....	.....	.....	1	170
Wylie (pt.) ....	"	"	1	200	.....	.....	1	100	1	100
Calvin .....	Nipissing .....	Robt. Small, Mattawa	2	212	.....	.....	3	283	2	310
Cameron (pt.) ..	"	"	13	1,466	.....	.....	7	686	3	500
Lauder .....	"	"	4	493	.....	.....	2	292	.....	.....
Mattawan .....	"	"	1	100	.....	.....	3	291	1	198
Papineau .....	"	"	2	200	.....	.....	3	300	1	111
Korah .....	Algoma .....	Edward Noble, Sault	.....	.....	.....	.....	.....	.....	.....	.....
Parke .....	"	Ste. Marie	.....	.....	.....	.....	.....	.....	.....	.....
Prince .....	"	"	1	160	.....	.....	1	160	1	108
Aberdeen .....	Algoma .....	Thos. Dodds, Thessalon	.....	.....	1	80	.....	.....	7	580
ad. ....	"	"	.....	.....	.....	.....	.....	.....	.....	.....
Galbraith .....	"	"	.....	.....	.....	.....	.....	.....	2	318½
Lefroy .....	"	"	.....	.....	.....	.....	.....	.....	.....	.....
Plummer .....	"	"	.....	.....	.....	.....	.....	.....	.....	.....
ad. ....	"	"	.....	.....	.....	.....	.....	.....	.....	.....
St. Joseph Is'd	Algoma .....	W. E. Whybourne,	7	722	.....	.....	7	733	7	826
St. Joseph	"	Marksville	.....	.....	.....	.....	.....	.....	.....	.....
Ch'nl Is'd	"	"	.....	.....	.....	.....	.....	.....	.....	.....
Baldwin .....	Algoma .....	Edward Arthurs,	8	1,118½	1	157½	1	162	1	158½
Merritt .....	"	Espanola	2	309½	.....	.....	1	150	1	159½
Blake .....	Thunder Bay.	W. A. Burrows, Port	1	160	.....	.....	1	160	.....	.....
Conmee .....	"	Arthur	3	400	2	13½	4	554½	6	600
Crooks .....	"	"	.....	.....	1	30	1	72	3	508
Dawson Road ..	"	"	7	569	1	40	6	469	4	475
Dorion .....	"	"	2	280	1	80	3	429½	5	625
Gillies .....	"	"	1	80¾	.....	.....	.....	.....	3	465
Gorham .....	"	"	2	223½	2	96½	1	160	7	950
Lybster .....	"	"	.....	.....	1	80	2	181	.....	.....
Marks .....	"	"	1	80	2	81½	3	401	2	321½
McGregor .....	"	"	3	457	3	66	4	616	1	2
McIntyre .....	"	"	.....	.....	1	104	.....	.....	.....	.....



## Appendix No. 14.—Continued.

Township.	District or County.	Agent.	No. of persons located.	No. of acres located.	No. of purchasers.	No. of acres sold.	No. of persons cancelled.	No. of acres resumed.	No. of patents issued.	No. of acres patented.
O'Connor.....	Thunder Bay.	W. A. Burrows, Port	1	162	2	4	1	162	3	478
Oliver.....	"	" Arthur	3	481	...	...	3	482	3	400
Paipoonge, N R	"	"	1	100	...	...	1	100	1	100
" S R	"	"	...	...	...	...	...	...	1	189
Pardee.....	"	"	1	160	...	...	...	...	...	...
Pearson.....	"	"	3	354	...	...	1	160	4	641
Scoble.....	"	"	5	678	...	...	4	558 $\frac{1}{2}$	3	429
Stirling.....	"	"	12	1,836 $\frac{3}{4}$	3	103 $\frac{1}{4}$	9	1,435	3	196
Strange.....	"	"	...	...	...	...	...	...	1	156
Ware.....	"	"	3	480	1	63 $\frac{1}{2}$	8	1,253 $\frac{1}{2}$	8	950
Atwood.....	Rainy River..	William Cameron,	...	...	...	...	...	...	...	...
Blue.....	"	" Stratton	5	430 $\frac{1}{2}$	1	2	4	472 $\frac{1}{2}$	2	243
Curran.....	"	"	...	...	1	2	2	322	1	162
Dewart.....	"	"	...	...	...	...	...	...	...	...
Dilke.....	"	"	...	...	...	...	...	...	...	...
Morley.....	"	"	5	487	1	4	3	405	1	81
Morson.....	"	"	12	1,685 $\frac{3}{4}$	4	284 $\frac{1}{2}$	11	1,166 $\frac{1}{4}$	1	140
McCrosson...	"	"	4	479 $\frac{1}{4}$	...	...	5	641 $\frac{1}{4}$	...	...
Nelles.....	"	"	2	239 $\frac{1}{2}$	1	9	2	238	3	242
Pattullo...	"	"	4	406	4	167	3	322	3	488
Pratt.....	"	"	3	381 $\frac{1}{2}$	...	...	1	40	1	160
Rosebery...	"	"	...	...	...	...	...	...	...	...
Shenston...	"	"	1	81	...	...	1	81	1	155
Sifton.....	"	"	4	561 $\frac{1}{4}$	...	...	3	440 $\frac{1}{4}$	1	160
Spohn.....	"	"	2	323	1	2	2	344	2	159 $\frac{1}{2}$
Sutherland...	"	"	6	881	2	96 $\frac{3}{4}$	6	791 $\frac{3}{4}$	1	40
Tait.....	"	"	2	164	2	8	2	246	1	164
Tovell.....	"	"	3	498 $\frac{1}{2}$	...	...	3	357 $\frac{3}{4}$	5	880
Worthington..	"	"	...	...	1	114	...	...	...	...
Aylsworth...	Rainy River..	Alex. McFayden, Emo.	...	...	...	...	...	...	...	...
Barwick.....	"	"	...	...	...	...	...	...	...	...
Burriss.....	"	"	1	159 $\frac{1}{2}$	...	...	1	159 $\frac{1}{2}$	...	...
Carpenter.....	"	"	2	223	2	100 $\frac{1}{2}$	2	223	2	358
Crozier.....	"	"	3	444	1	2	2	281	1	162
Dance.....	"	"	3	514	1	2	6	1,029 $\frac{1}{2}$	1	162
Devlin.....	"	"	...	...	...	...	...	...	...	...
Dobie.....	"	"	3	465 $\frac{1}{2}$	2	27 $\frac{1}{2}$	3	465 $\frac{1}{2}$	3	413
Fleming.....	"	"	...	...	...	...	1	160 $\frac{1}{4}$	...	...
Kingsford....	"	"	2	318 $\frac{1}{2}$	...	...	2	318 $\frac{1}{2}$	1	40 $\frac{1}{2}$
Lash.....	"	"	1	81	1	2	1	81	1	162
Mather.....	"	"	3	496 $\frac{1}{2}$	1	79 $\frac{1}{4}$	2	336	2	159
Miscampbell.	"	"	4	656 $\frac{1}{2}$	...	...	4	596 $\frac{1}{2}$	3	460
Potts.....	"	"	4	638 $\frac{1}{2}$	1	16	5	803 $\frac{1}{2}$	1	176
Richardson...	"	"	2	319	1	80	2	368 $\frac{1}{2}$	...	...
Roddick.....	"	"	...	...	...	...	...	...	...	...
Woodyatt.....	"	"	...	...	...	...	...	...	...	...
Aubrey.....	Kenora.....	J. E. Gibson, Dryden..	6	842 $\frac{1}{2}$	...	...	6	810 $\frac{1}{2}$	4	485
Britton.....	"	"	...	...	...	...	1	160 $\frac{1}{2}$	...	...
Eton.....	"	"	4	547	1	80	3	400	6	960
Langton.....	"	"	2	243 $\frac{1}{2}$	...	...	1	160	...	...
Melgund.....	"	"	...	...	...	...	3	476	2	60
Mutrie.....	"	"	2	302 $\frac{1}{2}$	...	...	...	...	3	415
Redvers.....	"	"	2	359	...	...	1	160 $\frac{1}{2}$	...	...
Rowell.....	"	"	...	...	...	...	...	...	...	...
Rugby.....	"	"	...	...	...	...	...	...	...	...
Sanford.....	"	"	4	552	1	35 $\frac{1}{4}$	16	2,293 $\frac{1}{4}$	3	400
Southworth...	"	"	7	744	...	...	4	421	...	...

## Appendix No. 14.—Continued.

Township.	District or County.	Agent.	No. of persons located.	No. of acres located.	No. of purchasers.	No. of acres sold.	No. of persons cancelled.	No. of acres resumed.	No. of patents issued.	No. of acres patented.
Temple.....	Kenora .....	J. E. Gibson, Dryden..	.....	.....	1	10	1	80	1	10
Van Horne .....	" .....	" .....	2	316	1	80	2	316	3	160
Wabigoon .....	" .....	" .....	1	160 $\frac{1}{2}$	1	75 $\frac{1}{2}$	7	1,033 $\frac{1}{2}$	1	145 $\frac{1}{2}$
Wainwright .....	" .....	" .....	6	953 $\frac{1}{2}$	.....	.....	5	795 $\frac{1}{2}$	1	118 $\frac{1}{2}$
Zealand .....	" .....	" .....	2	444 $\frac{1}{2}$	5	270	5	763	6	276
Melick .....	Kenora .....	W. L. Spry, Kenora...	1	160	1	1	6	881	4	460
Pellatt .....	" .....	" .....	1	110	1	36	4	519	1	125
Balfour .....	Sudbury.....	J. K. MacLennan, Sud-	.....	.....	.....	.....	1	159 $\frac{1}{2}$	.....	.....
Blezard .....	" .....	" .....	1	160	.....	.....	1	40	2	200
Broder .....	" .....	" .....	2	268 $\frac{1}{2}$	.....	.....	1	114 $\frac{1}{2}$	2	262 $\frac{1}{2}$
Capreol .....	" .....	" .....	1	163 $\frac{1}{2}$	.....	.....	1	163 $\frac{1}{2}$	1	144
Chapleau .....	" .....	" .....	.....	.....	.....	.....	.....	.....	.....	.....
Dill .....	" .....	" .....	.....	.....	.....	.....	.....	.....	1	160
Garson .....	" .....	" .....	2	253 $\frac{1}{2}$	1	88	1	160	1	248
Hanmer .....	" .....	" .....	.....	.....	.....	.....	.....	.....	.....	.....
Lumsden .....	" .....	" .....	3	323	.....	.....	2	317 $\frac{1}{2}$	.....	.....
Morgan .....	" .....	" .....	2	240	1	80	.....	.....	.....	.....
Neelon .....	" .....	" .....	.....	.....	.....	.....	.....	.....	1	157
Rayside .....	" .....	" .....	.....	.....	.....	.....	.....	.....	.....	.....
Appelby .....	Sudbury .....	John Brown, Markstay	4	639 $\frac{1}{2}$	.....	.....	.....	.....	.....	.....
Casimir .....	" .....	" .....	4	627 $\frac{1}{2}$	1	7	1	160 $\frac{1}{2}$	3	487
Dunnet .....	" .....	" .....	1	161	1	1	.....	.....	1	161
Hagar .....	" .....	" .....	22	3,458 $\frac{1}{2}$	1	160	12	1,891	3	462 $\frac{1}{2}$
Jennings .....	" .....	" .....	1	166 $\frac{1}{2}$	1	1 $\frac{1}{2}$	.....	.....	.....	.....
Kirkpatrick .....	" .....	" .....	4	649	1	7	1	183 $\frac{1}{2}$	1	120
Ratter .....	" .....	" .....	5	814 $\frac{1}{2}$	.....	.....	2	320	.....	.....
Caldwell .....	Nipissing .....	J. A. Philion, Sturgeon	2	320	.....	.....	.....	.....	2	231
Cosby .....	" .....	" .....	2	319 $\frac{1}{2}$	.....	.....	.....	.....	5	650
Grant .....	" .....	" .....	3	452 $\frac{1}{2}$	.....	.....	1	135	.....	.....
Macpherson .....	" .....	" .....	.....	.....	.....	.....	.....	.....	3	477 $\frac{1}{2}$
Martland .....	" .....	" .....	2	298	.....	.....	3	455	2	309 $\frac{1}{2}$
Springer .....	" .....	" .....	3	340	.....	.....	1	100	.....	.....
Abinger .....	Lennox and	Charles Both, Denbigh	2	196	.....	.....	1	96	1	100
Canonto, S....	Frontenac....	" .....	.....	.....	.....	.....	.....	.....	.....	.....
" N....	" .....	" .....	.....	.....	.....	.....	.....	.....	.....	.....
Clarendon .....	" .....	" .....	.....	.....	.....	.....	.....	.....	4	500
Denbigh .....	Lennox and	" .....	.....	.....	.....	.....	.....	.....	.....	.....
Miller (pt.)...	Addington	" .....	5	681	.....	.....	5	654	2	398
Palmerston .....	Frontenac....	" .....	.....	.....	.....	.....	.....	.....	.....	.....
McClintock ...	Haliburton...	Unattached .....	.....	.....	.....	.....	.....	.....	.....	.....
Airy .....	Nipissing.....	" .....	6	667	.....	.....	.....	.....	3	472
Finlayson .....	" .....	" .....	5	64	6	74	.....	.....	7	89
Murchison .....	" .....	" .....	4	388 $\frac{1}{2}$	.....	.....	1	200	1	41
Sabine .....	" .....	" .....	3	391	.....	.....	.....	.....	4	650
*O'Brien .....	Temiskaming.	" .....	29	2,535	.....	.....	.....	.....	.....	.....
*Owens .....	" .....	" .....	10	990	.....	.....	.....	.....	.....	.....
*Williamson .....	" .....	" .....	2	194	.....	.....	.....	.....	.....	.....
			576	72,420 $\frac{1}{2}$	140	4,878 $\frac{1}{2}$	425	55,278 $\frac{1}{2}$	431	49,685 $\frac{1}{2}$

\* Located under Returned Soldiers' and Sailors' Land Settlement Act, 1917

No. of lots assigned ..... 253

No. of acres assigned ..... 34,123

By Special Regulations under Order in Council, dated 7th February, 1919, Returned Soldiers were permitted to acquire free grant locations or have their arrears due the Crown in respect of land for settlement purposes remitted, and the following list comprises the extent of such transactions.

## IN SALE TERRITORY.

District.	Agency	Number Locations	No. arrears remitted	Total
Algoma .....	Thessalon .....	1	..	
Nipissing .....	North Bay .....	3	1	
" .....	Markstay .....	1	..	
Sudbury .....	Espanola .....	2	..	
" .....	Massey .....	1	..	
Timiskaming .....	Haileybury .....	2	1	
" .....	New Liskeard .....	1	9	
" .....	Elk Lake .....	1	..	
" .....	Englehart .....	9	7	
" .....	Matheson .....	23	30	
" .....	Cochrane .....	66	32	
Algoma .....	Hearst .....	24	10	
Peterboro .....	Unattached .....	2	..	
		136	90	226

## IN FREE GRANT TERRITORY.

Thunder Bay .....	Port Arthur .....	4	..	
Parry Sound .....	Parry Sound .....	2	..	
Kenora .....	Kenora .....	3	..	
Nipissing .....	North Bay .....	1	..	
" .....	Unattached .....	1	..	
Rainy River .....	Stratton .....	2	..	
Sudbury .....	Sudbury .....	5	..	
Muskoka .....	Bracebridge .....	1	..	
Hastings .....	Maynooth .....	1	..	
Renfrew .....	Pembroke .....	1	..	
		21	..	21
				247

*Appendix No. 14.—Concluded.*

## ISLANDS SOLD

Township	District or County	Agent	No. of Acres sold
Harrison: Parcels 4 & 5 of Island 1143a.....	Parry Sound.....	Miss J. M. Campbell, Parry Sound	10
Conger: Part Island B 90.....	" "	" "	7.10/100
Shawanaga: Island C 389.....	" "	" "	1½
Cowper: Island B 349.....	" "	" "	3.70/100
Harrison: " 13a.....	" "	" "	6.90/100
Carling: " C 372.....	" "	" "	1.36/100
" " C 42.....	" "	" "	1¾
" " C 23.....	" "	" "	7.35/100
" " C 24.....	" "	" "	5.15/100
Harrison: " 178.....	" "	" "	15/100
" " 419.....	" "	" "	1.02/100
Conger: " B 17.....	" "	" "	1.80/100
" " B 19.....	" "	" "	1.40/100
Shawanaga: Island 395a.....	" "	" "	16.40/100
" " 987b.....	" "	" "	16
Harrison: Parcel 6 of Island 96a	" "	" "	9
" " 14 & 75 " "	" "	" "	21
" " 2 of " 26a	" "	" "	14
" " Island 497a.....	" "	" "	2.40/100
" " 516a.....	" "	" "	60/100
" " 553a.....	" "	" "	¾
" " 559a.....	" "	" "	1.30/100
" " 557a.....	" "	" "	90/100
Cavendish: Island No. 2 Catcha- coma Lake.....	Peterborough.....	A. N. Wilson, Kinmount.	8
" " Island No. 3 Catcha- coma Lake.....	" "	" "	16
" " Island No. 4 Catcha- coma Lake.....	" "	" "	28
" " Island No. 6 Catcha- coma Lake.....	" "	" "	2
Franklin: Vimy Ridge Island ...	Muskoka .....	J. B. Brown, Bracebridge	53/100
Watt: Balthayock .....	" "	" "	6½
Sherborne: Pt. Denison Island, Hollow Lake.....	Haliburton.....	" "	14½
Morrison: Lalla Rookh Island ...	Muskoka .....	" "	1.27/100
Temple: Pt. Island 55, Eagle Lake	Kenora.....	J. E. Gibson, Dryden.....	10
Melick: Island N, Black Sturgeon Lake .....	" "	W. L. Spry, Kenora.....	1
Nipissing: Pt. Island B, South Bay	Parry Sound.....	H. J. Ellis, Powassan ...	23
Macgregor: Island No. 17.....	Thunder Bay.....	W. A. Burrows, Port Arthur	2
			244

SELBY DRAPER, Free Grants Clerk.  
W. C. CAIN, Chief Clerk.

ALBERT GRIGG,  
Deputy Minister of Lands and Forests.



## Appendix No. 15.

Statement showing the number of purchasers and of acres sold; of lots resumed for non-performance of the settlement duties; and of patents issued in Townships other than Free Grant during the year ending 31st October, 1919.

Township.	District or County.	Agent.	No. of acres sold.	No. of pur- chasers.	No. of sales cancelled.	No. of acres resumed.	No. of patents issued.	No. of acres patented.
Blount .....	Temiskaming.	S. J. Dempsay, Cochrane	.....	.....	.....	.....	.....	.....
Brower .....	"	"	135	1	2	295½	.....	.....
Calder .....	"	"	.....	.....	.....	.....	6	649
Clute .....	"	"	1,653	13	13	1,920	5	780
Colquhoun .....	"	"	.....	.....	.....	.....	.....	.....
Fauquier .....	"	"	1,984	14	4	599	5	863
Fournier .....	"	"	.....	.....	.....	.....	1	158½
Fox .....	"	"	1,116	8	10	1,589½	1	149½
Glackmeyer ..	"	"	152	1	4	601	8	1,112
Kennedy .....	"	"	151	1	1	150	.....	.....
Lamarche .....	"	"	168½	1	.....	.....	2	319
Leitch .....	"	"	289	2	1	145	.....	.....
Newmarket ..	"	"	638½	6	3	470	.....	.....
Pyne .....	"	"	966½	7	2	319	.....	.....
Shackleton ...	"	"	501	3	.....	.....	1	23½
Catharine .....	Temiskaming.	Jos. Woollings, Englehart	318½	3	4	625½	.....	.....
Chamberlain ..	"	"	158½	1	1	159	4	588½
Dack .....	"	"	200	2	2	319	3	456
Eby .....	"	"	.....	.....	1	37¾	1	37¾
Evanturel .....	"	"	160½	1	2	317	1	161½
Gross .....	"	"	319½	2	3	479½	.....	.....
Ingram .....	"	"	916	8	7	1,054	2	242
Marter .....	"	"	480	3	1	160	3	350
Marquis .....	"	"	3	1	.....	.....	.....	.....
Otto .....	"	"	320	2	.....	.....	4	241½
Pacaud .....	"	"	360	10	1	159½	19	917½
Pense .....	"	"	430¾	4	1	160	.....	.....
Robillard .....	"	"	45	2	1	161	6	918½
Savard .....	"	"	161	1	3	481	3	467½
Sharpe .....	"	"	159	1	.....	.....	2	248½
Truax .....	"	"	41	1	.....	.....	1	162½
Armstrong ...	Temiskaming.	J. W. Bolger, New Lis-	80	1	.....	.....	6	716½
Auld .....	"	" " " heard	.....	.....	.....	.....	.....	.....
Beauchamp .....	"	"	468½	3	3	472	8	1,281½
Brethour .....	"	"	687	5	1	158	5	784
Bryce .....	"	"	160	1	3	480	2	317½
Bucke .....	"	"	.....	.....	.....	.....	5	500½
Cane .....	"	"	160	1	.....	.....	4	479
Casey .....	"	"	200	3	2	80	10	1,332½
Dymond .....	"	"	.....	.....	.....	.....	4	558½
Firstbrook .....	"	"	162½	1	8	1,249½	3	250
Harley .....	"	"	.....	.....	.....	.....	9	1,174
Harris .....	"	"	316½	2	.....	.....	6	684
Henwood .....	"	"	962½	6	3	480	7	1,042
Hilliard .....	"	"	784	5	.....	.....	6	937
Hudson .....	"	"	.....	.....	.....	.....	3	483½
Kerns .....	"	"	.....	.....	.....	.....	12	1,238
Lundy .....	"	"	.....	.....	1	165½	.....	.....
Tudhope .....	"	"	.....	.....	2	283½	5	204½
Smyth .....	Temiskaming.	Mark Morgan, Elk Lake	163½	1	.....	.....	3	180¾
Lorrain .....	Temiskaming	Neil J. McAulay, Hailey- bury	201	3	2	319½	1	176

## Appendix No. 15.—Continued.

Township.	District or County.	Agent.	No. of acres sold.	No. of pur- chasers.	No. of sales cancelled.	No. of acres resumed.	No. of patents issued.	No. of acres patented.
Beatty .....	Temiskaming.	F. E. Ginn, Matheson ..	150 $\frac{1}{2}$	1	3	247 $\frac{1}{2}$	8	793 $\frac{1}{2}$
Benoit .....	"	"	483 $\frac{1}{2}$	3	7	828	5	161
Bond .....	"	"	323 $\frac{1}{2}$	2	11	1,768	1	1
Bowman .....	"	"	160 $\frac{1}{2}$	1	4	640 $\frac{1}{2}$	3	375
Calvert .....	"	"	251	2	1	140	4	243 $\frac{1}{2}$
Carr .....	"	"	670	4	6	817 $\frac{1}{2}$	8	1,400
Clergue .....	"	"	.....	.....	3	486	5	223
Currie .....	"	"	.....	.....	2	322	4	423
Dundonald .....	"	"	613	4	4	618	.....	.....
Evelyn .....	"	"	.....	.....	.....	.....	.....	.....
German .....	"	"	165 $\frac{1}{2}$	1	.....	.....	.....	.....
Hislop .....	"	"	760	4	2	387	2	172
Matheson .....	"	"	.....	.....	1	36	1	36
Mountjoy .....	"	"	1,134 $\frac{1}{2}$	8	4	603	2	76
McCart .....	"	"	620	4	2	321 $\frac{1}{2}$	.....	.....
Playfair .....	"	"	1,767 $\frac{1}{2}$	12	4	638 $\frac{1}{2}$	6	900
Stock .....	"	"	.....	.....	1	151 $\frac{1}{2}$	1	144
Taylor .....	"	"	317	3	.....	.....	3	470 $\frac{1}{2}$
Walker .....	"	"	.....	.....	.....	.....	1	14
Casgrain .....	Algoma .....	T. V. Anderson, Hearst.	430	3	3	446	5	750
Eilber .....	"	"	.....	.....	.....	.....	.....	.....
Hanlan .....	"	"	882	7	19	2,810	1	97
Kendall .....	"	"	113	2	.....	.....	6	710
Lowther .....	"	"	595	4	2	302	.....	.....
Forbes .....	Thunder Bay.	W. A. Burrows, Port	384	3	1	112	1	7
Lyon .....	"	" Arthur	161	1	2	320	3	291
Nepigon .....	"	"	464 $\frac{1}{2}$	4	13	1,981	8	1,224
Aweres .....	Algoma .....	E. Noble, Sault Ste. Marie	.....	.....	.....	.....	.....	.....
Tarentorus .....	"	"	80	1	.....	.....	.....	.....
Vankoughnet .....	"	"	188	3	1	142	1	10 $\frac{6}{10}$
Watten .....	Rainy River..	C. J. Hollands, Fort Frances	296	2	4	258	7	400
Bright .....	Algoma .....	Thos. Dodds, Thessalon.	.....	.....	.....	.....	.....	.....
Day .....	"	"	.....	.....	.....	.....	1	135
Gladstone .....	"	"	.....	.....	.....	.....	1	156
Haughton .....	"	"	.....	.....	1	135 $\frac{1}{2}$	4	472
Johnson .....	"	"	289	1	.....	.....	1	127
Kirkwood .....	"	"	230	1	.....	.....	1	230
Parkinson .....	"	"	.....	.....	2	83 $\frac{1}{4}$	2	83 $\frac{1}{4}$
Patton .....	"	"	.....	.....	.....	.....	3	680
Rose .....	"	"	.....	.....	.....	.....	1	154
Striker .....	"	"	.....	.....	.....	.....	.....	.....
Thompson .....	"	"	.....	.....	.....	.....	.....	.....
Wells .....	"	"	.....	.....	.....	.....	.....	.....
Drayton .....	Kenora .....	W. L. Spry, Kenora....	160	1	.....	.....	2	93
Hallam .....	Sudbury .....	R. W. Teasdale, Massey	974	6	.....	.....	6	964
Harrow .....	"	"	160 $\frac{1}{2}$	1	.....	.....	1	159 $\frac{1}{2}$
May .....	"	"	159 $\frac{1}{2}$	1	.....	.....	3	418
Salter .....	"	"	.....	.....	.....	.....	1	160
Shedden .....	Algoma .....	"	.....	.....	.....	.....	2	301 $\frac{1}{2}$
Victoria .....	"	"	102 $\frac{3}{4}$	1	1	160	3	220
Dowling .....	Sudbury .....	J. K. MacLennan, Sud- bury	.....	.....	.....	.....	3	583
Scollard .....	Nipissing ....	J. A. Pillion, Sturgeon	160 $\frac{1}{2}$	1	.....	.....	1	161 $\frac{1}{2}$
Mason .....	"	" Falls	162 $\frac{1}{2}$	1	.....	.....	1	2

## Appendix No. 15.—Continued.

Township.	District or County.	Agent.	No. of acres sold.	No. of pur- chasers.	No. of sales cancelled.	No. of acres resumed.	No. of patents issued.	No. of acres patented.
Hugel .....	Nipissing ....	John Brown, Markstay.	2,024½	15	.....	.....	6	995
Widdifield ....	Nipissing ....	W.J. Parsons, North Bay	1,832½	12	9	1,313½	8	1,078
Nairn .....	Sudbury .....	Edward Arthurs, Espanola	.....	.....	.....	.....	.....	.....
Admaston ....	Renfrew .....	Unattached .....	248	2	.....	.....	5	654
Bagot .....	" .....	" .....	500	4	.....	.....	7	1,800
Blithfield .....	" .....	" .....	290	2	.....	.....	2	480
Horton .....	" .....	" .....	100	1	.....	.....	.....	.....
McNabb .....	" .....	" .....	100	1	.....	.....	2	180
Westmeath .....	" .....	" .....	.....	.....	.....	.....	1	78½
Effingham ....	Lennox .....	Unattached .....	117	1	.....	.....	.....	.....
Kaladar .....	" .....	" .....	84	1	.....	.....	3	310½
Sheffield .....	" .....	" .....	45	1	.....	.....	3	200
Bentlnck .....	Grey .....	Unattached .....	.....	.....	.....	.....	5	401
Derby .....	" .....	" .....	.....	.....	.....	.....	1	76
Egremont .....	" .....	" .....	.....	.....	.....	.....	3	200
Glenelg .....	" .....	" .....	.....	.....	.....	.....	5	404
Holland .....	" .....	" .....	30	1	.....	.....	5	411½
Normanby .....	" .....	" .....	½	1	.....	.....	1	½
Osprey .....	" .....	" .....	.....	.....	.....	.....	2	198½
Proton .....	" .....	" .....	.....	.....	.....	.....	4	347½
Sullivan .....	" .....	" .....	.....	.....	.....	.....	3	250
Arran .....	Bruce .....	Unattached .....	.....	.....	.....	.....	4	243
Brant .....	" .....	" .....	.....	.....	.....	.....	.....	.....
Bruce .....	" .....	" .....	.....	.....	.....	.....	8	523
Elderslie .....	" .....	" .....	.....	.....	.....	.....	5	583
Huron .....	" .....	" .....	.....	.....	.....	.....	3	200
Barrie .....	Frontenac ..	Unattached .....	67	3	.....	.....	2	2
Olden .....	" .....	" .....	200	1	.....	.....	1	200
Beckwith .....	Lanark .....	Unattached .....	.....	.....	.....	.....	.....	.....
Darling .....	" .....	" .....	100	1	.....	.....	1	100
Pakenham .....	" .....	" .....	200	1	.....	.....	.....	.....
Sandwich, E. ..	Essex .....	Unattached .....	684 1000	1	.....	.....	1	684 1000
Haughton .....	Norfolk .....	Unattached .....	.....	.....	.....	.....	2	50
Rama .....	Ontario .....	Unattached .....	.....	.....	.....	.....	1	100
Carden .....	Victoria .....	Unattached .....	.....	.....	.....	.....	3	284
Dalton .....	" .....	" .....	.....	.....	.....	.....	.....	.....
Laxton .....	" .....	" .....	.....	.....	.....	.....	1	100
Somerville .....	" .....	" .....	299	2	.....	.....	2	251
Edwardsburgh	Grenville ....	Unattached .....	50	1	.....	.....	1	50
Harvey .....	Peterborough.	Unattached .....	145	2	2	144	3	535
Smith .....	" .....	" .....	.....	.....	.....	.....	1	100
Elzevir .....	Hastings .....	Unattached .....	61½	1	.....	.....	.....	.....
Grimsthorpe ..	" .....	" .....	224	1	.....	.....	.....	.....
Tudor .....	" .....	" .....	99	1	.....	.....	4	367
Ashby .....	Lennox and	Unattached .....	100	1	.....	.....	.....	.....
Sheffield .....	Addington	" .....	151	1	.....	.....	2	380

## Appendix No. 15.—Continued.

Township.	District or County.	Agent.	No. of acres sold.	No. of pur- chasers.	No. of sales cancelled.	No. of acres resumed.	No. of patents issued.	No. of acres patented.
Kitely.....	Leeds.....	Unattached .....	151	1	.....	.....	1	151
Elizabethtown.	"	" .....	.....	.....	.....	.....	1	100
Cornwall .....	Stormont....	Unattached .....	145	2	.....	.....	2	145
Roxborough...	"	" .....	100	1	.....	.....	2	200
Matchedash...	Simcoe .....	Unattached .....	16	2	.....	.....	.....	.....
Arthur .....	Wellington...	Unattached .....	.....	.....	.....	.....	1	100
Bertie .....	Welland .....	Unattached .....	42	4	.....	.....	3	41½
Barton .....	Wentworth ..	" .....	69	1	.....	.....	1	69
Cody .....	Temiskaming.	Unattached .....	¾	1	.....	.....	6	183
Maisonville ...	"	" .....	1	1	.....	.....	1	1
Bigwood.....	Sudbury.....	Unattached .....	17	1	.....	.....	2	17
Burwash .....	"	" .....	319	2	.....	.....	1	159
Creighton.....	"	" .....	.....	.....	.....	.....	4	313½
Dennison .....	"	" .....	323	2	.....	.....	2	233
Drury .....	"	" .....	164	1	.....	.....	1	80
Dryden .....	"	" .....	160½	1	.....	.....	.....	.....
Falconbridge .	"	" .....	160½	1	.....	.....	.....	.....
Lorne .....	"	" .....	341	4	.....	.....	1	167½
Louise .....	"	" .....	.....	.....	.....	.....	3	283½
McKinnon.....	"	" .....	248	2	.....	.....	1	154½
MacLennan ..	"	" .....	.....	.....	.....	.....	1	35½
Shakespeare ..	"	" .....	161	1	.....	.....	3	320½
Snider .....	"	" .....	.....	.....	.....	.....	7	330
Waters .....	"	" .....	402	3	.....	.....	4	361
Badgerow ....	Nipissing ....	Unattached .....	1,452	11	1	160½	7	890
Crerar .....	"	" .....	1,248½	11	.....	.....	10	1,480
Delamere.....	"	" .....	308	2	.....	.....	.....	.....
Field .....	"	" .....	1,033½	7	.....	.....	6	561
Gibbons .....	"	" .....	665	4	.....	.....	3	460
Malachi .....	Kenora.....	" .....	64	4	.....	.....	3	41
Jaffray .....	"	" .....	.....	.....	.....	.....	5	538
McTavish.....	Thunder Bay.	" .....	160	1	.....	.....	1	160
Townsites—								
Armstrong...	Thunder Bay.	Unattached .....	½	2	.....	.....	.....	.....
Grant .....	"	" .....	8	2	.....	.....	5	1
MacFarlane...	Kenora.....	" .....	¼	1	.....	.....	.....	.....
Dryden .....	"	" .....	.....	.....	.....	.....	1	½
Sioux Look- out .....	"	" .....	.....	.....	.....	.....	1	¼
Waldhof.....	"	" .....	100	1	.....	.....	1	100
Winnipeg River Crossing...	"	" .....	¾	1	.....	.....	8	23
Hearst .....	Algoma.....	T. V. Anderson .....	¼	1	.....	.....	.....	.....
Hilton .....	"	W. E. Whybourne,	19¼	20	.....	.....	15	16¾



## Appendix No. 15.—Concluded.

Townsites.	District or County.	Agent.	No. of acres sold.	No. of pur- chasers.	No. of sales cancelled.	No. of acres resumed.	No. of patents issued.	No. of acres patented
Capreol .....	Sudbury ....	Unattached .....						
Frederickhouse	Temiskaming.	" .....	1	5			5	1 <sup>55</sup> <sub>100</sub>
Iroquois Falls	"	F. E. Ginn, Matheson ..						
Kirkland Lake	"	Unattached .....	1	3				
Smyth .....	"	" .....					3	1 <sup>4</sup> <sub>4</sub>
Muskokaville .	Muskoka .....	J.B. Brown, Bracebri'ge	$\frac{1}{3}$	1			2	3 <sup>32</sup> <sub>100</sub>
Alma .....	Wellington...	Unattached .....	1	1			1	1
Ayton .....	Grey .....	" .....	$\frac{1}{2}$	1			1	$\frac{1}{2}$
Petewawa....	Renfrew.....	Finlay Watt, Renfrew.	2	17			10	3 <sup>83</sup> <sub>100</sub>
Bobcaygeon...	Victoria .....	Unattached .....					1	$\frac{1}{2}$
WATER LOTS.								
City & Towns:								
Kingston ...	Frontenac ...	Unattached .....	2 <sup>96</sup> <sub>100</sub>	1			1	2 <sup>96</sup> <sub>100</sub>
Sombra .....	Lambton .....	" .....	$\frac{35}{100}$	1				
Ford City ...	Essex .....	" .....					1	$\frac{684}{1000}$
Windsor ....	" .....	" .....	$\frac{2}{3}$	1			1	$\frac{2}{3}$
Keswick ....	York .....	" .....	2	2			2	2
Pembroke ...	Renfrew .....	" .....	1 <sup>12</sup> <sub>100</sub>				1	$\frac{12}{100}$
Belle Ewart	Simcoe .....	" .....	$\frac{1}{3}$	1			1	$\frac{1}{3}$
ISLANDS.								
Burgess—								
Whiskey Is'd	Lanark .....	Unattached .....					1	$\frac{27}{100}$
Bastard—								
Kitchener Is-	Leeds .....	" .....	5 $\frac{1}{2}$	1			1	5 $\frac{1}{2}$
land .....	" .....	" .....	2 $\frac{1}{2}$	1			1	2 $\frac{1}{2}$
Mink Island.								
Barrie—	Frontenac ...	" .....	1	1			1	1
Pyne Island.								
Island in	" .....	" .....	2	2			2	2
Shahbome-								
kah Lake.	" .....	" .....						
Bedford—								
Bedford Is'd	" .....	" .....						
Ashby—								
Round Island	Lennox and	" .....						
Honeymoon	Addington.	" .....	$\frac{65}{100}$	2			2	$\frac{65}{100}$
Island....	" .....	" .....						
Matchedash—								
Island in Bur-	Simcoe .....	" .....	1	1			1	1
rows Lake.								
Malachi—	Kenora .....	" .....					1	1 <sup>3</sup> <sub>10</sub>
Island G ...								
Total .....			49,864 $\frac{2}{3}$	414	208	30,363 $\frac{1}{2}$	566	55,078 <sup>56</sup> <sub>100</sub>

Number of lots assigned.....312

Number of sales restored.....19

Number of acres assigned.....44,201 $\frac{1}{2}$ Number of acres restored.....2,703 $\frac{1}{2}$ 

W. R. LEDGER, Sales Clerk.

W. C. CAIN, Chief Clerk in Charge.

ALBERT GRIGG,

Deputy Minister of Lands and Forests.

*Appendix No. 16.*

Statement of Crown Surveys completed and closed during the twelve months ending October 31st, 1919.

No.	Date of Instructions.	Name of Surveyor.	Description of Survey.	Amount Paid	No. in Acres
1	Sept. 7, 1917.	A. L. Russell...	Survey of the shores of Lower Shebandowan Lake, District of Thunder Bay .....	\$756 90	
2	June 17, 1918.	Phillips & Benner	Survey certain boundaries of the Black Sturgeon Pulp and Timber Limit, District of Thunder Bay...	1,766 75	
3	Apr. 20, 1918.	H. J. Beatty.....	Survey of certain township outlines, District of Timiskaming..	1,117 05	
4	May 20, 1918.	David Beatty ...	Survey of the Township of Williamson, District of Timiskaming....	3,062 25	51,878
5	June 14, 1918.	E. R. Bingham...	Survey of certain base and meridian lines, District of Thunder Bay...	1,614 25	
6	June 26, 1918.	Lang & Ross.....	Survey of the Township of Cumming, District of Algoma .....	3,548 10	51,898
7	Nov. 19, 1918.	Lincoln Mooney..	Survey of a line dividing the Township of Wigle in the District of Sudbury into north and south halves .....	499 85	
8	Apr. 15, 1919.	M. E. Crouch....	To survey certain boundary lines of the Pic River Pulp and Timber Limit, District of Thunder Bay..	8,605 68	
9	May 16, 1919.	Lincoln Mooney..	To survey timber limits in the Timagami Forest Reserve, east of the Township of Askin, District of Nipissing.....	1,078 25	
10	Apr. 15, 1919.	Sutcliffe & Neelands .....	To survey certain township outlines in the District of Timiskaming..	7,618 23	
11	Apr. 15, 1919.	T. J. Patten ....	To survey a meridian line in the Districts of Kenora and Patricia.	3,723 88	
12	Apr. 15, 1919.	Speight & Van Nostrand .....	To survey certain township outlines on the Ground Hog River, Districts of Sudbury and Timiskaming .....	5,697 75	
			Seythes & Co., Ltd., iron posts....	575 00	
				39,663 94	103,776

L. V. RORKE,  
*Director of Surveys.*

ALBERT GRIGG,  
*Deputy Minister Lands and Forests.*

*Appendix No. 17.*

Statement of Surveys in progress during the twelve months ending October 31st, 1919.

No.	Date of Instructions.	Name of Surveyor.	Description of Surveys.	Amount Paid
1	May 16, 1919.	E. R. Bingham...	Survey of part of the Township of Devon, District of Thunder Bay .....	\$3,320 00
2	July 8, 1919.	E. R. Bingham...	Survey outlines of certain townships west of the Townships of Marks and Conmee, District of Thunder Bay .....	2,700 00
3	Apr. 30, 1919.	David Beatty ...	Traverse certain lakes in the Timagami Forest Reserve, Districts of Nipissing and Sudbury .....	4,000 00
4	Apr. 15, 1919.	H. J. Beatty.....	Survey certain township outlines, north of Lake Abitibi, District of Timiskaming..	5,650 00
5	Apr. 15, 1919.	A. S. Code .....	Survey certain township outlines in the District of Algoma .....	4,000 00
6	May 2, 1919.	T. G. Code .....	Traverse certain lakes and rivers in the Districts of Sudbury and Algoma.....	3,440 00
7	May 8, 1919.	S. B. Code .....	Traverse the shores of Charleston Lake, Townships of Lansdowne and Escott, County of Leeds .....	1,350 00
8	Apr. 22, 1919.	Cavana & Watson	Survey certain township outlines, District of Sudbury .....	3,200 00
9	Apr. 15, 1919.	Jas. S. Dobie....	Survey a meridian line between the Districts of Thunder Bay and Kenora.....	11,900 00
10	Apr. 15, 1919.	J. W. Fitzgerald.	Survey a meridian line in the vicinity of the Ground Hog River, and the residue of the Township of Nansen, District of Timiskaming .....	4,550 00
11	Apr. 25, 1919.	C. E. Fitton ....	To inspect Crown Surveys .....	3,650 00
12	May 9, 1919.	D. J. Gillon ....	Survey a part of the boundary line between the Districts of Rainy River and Kenora, and certain meridian lines in Rainy River .....	4,900 00
13	May 8, 1919.	C. R. Kenny ....	Traverse Missinaibi Lake and River and tributary waters, Districts of Algoma and Sudbury .....	3,240 00
14	May 1, 1919.	Lang & Ross ....	Survey certain township outlines, District of Algoma .....	5,700 00
15	Aug. 6, 1919.	J. L. Morris .....	To re-establish part of the boundary of the Algonquin Provincial Park, District of Nipissing .....	2,500 00
16	Apr. 15, 1919.	McAuslan & Anderson .....	Survey certain townships in the District of Algoma .....	5,312 50
17	May 1, 1919.	N. B. MacRostie.	Survey certain township outlines on the Kapuskasing River, District of Algoma.	4,000 00
18	Sept. 30, 1919.	Phillips & Benner	Survey a meridian line and that portion of Dog Lake lying north of the Township of Fowler, District of Thunder Bay.....	500 00
19	Apr. 15, 1919.	Phillips & Benner	To survey the Township of Fowler, in the District of Thunder Bay .....	5,860 31
20	May 1, 1919.	G. L. Ramsey....	To survey certain base and meridian lines, District of Thunder Bay .....	4,586 50
21	June 30, 1919.	A. L. Russell....	Traverse the shore of Upper Shebandowan Lake and Green Water Lake, District of Thunder Bay .....	500 00
22	Apr. 15, 1919.	Wm. A. Sibbett..	Survey the residue of the Townships of Casgrain and Hanlan, District of Algoma.	2,500 00
23	July 22, 1919.	G. L. Ramsey ...	Traverse Long Lake, District of Thunder Bay .....	1,800 00
				89,159 31

*Appendix No. 18.*

Statement of Municipal Surveys for which instructions issued during the twelve months ending October 31st, 1919.

No.	Name of Surveyor.	No.	Date of Instructions.	Description of Survey.
1	Geo. L. Brown	720	July 2, 1919.	To survey the road allowance between the 4th and 5th concessions of the Township of Williamsburg, across lots 10, 11 and 12, in said township, and that stone or other durable monuments be placed to mark the boundaries of the same.
2	H. J. Beatty..	721	Aug. 26, 1919.	To survey the road allowance between the 9th and 10th concessions across lots 1, 2 and 3 in the Township of McNab, and that stone or other durable monuments be placed to mark the boundaries of such road allowance.
3	James A. Bell & Son .....	722	Aug. 27, 1919.	To survey the boundary line between the Village of Port Stanley and the Township of Southwold, in the County of Elgin, and that stone or other durable monuments be placed marking such boundary and the intersections of the roads or streets running from the said village into said township.

L. V. RORKE,  
Director of Surveys.

ALBERT GRIGG,  
Deputy Minister Lands and Forests.

*Appendix No. 19.*

Statement of Municipal Surveys confirmed during the twelve months ending October 31st, 1919.

No.	Name of Surveyor.	No.	Date of Instructions.	Description of Survey.	Date when confirmed under R. S. O. 1914, Chapter 166, Secs. 10-15, inclusive.
1	S. B. Code .....	717	June 4, 1918.	To survey the road allowance between concessions 5 and 6, in the Township of Goulburn, across lots 16, 17 and 18, and that stone or other durable monuments be placed to mark the limits of the said road allowance .....	Nov. 18, 1918.

L. V. RORKE,  
Director of Surveys.

ALBERT GRIGG,  
Deputy Minister Lands and Forests.



*Appendix No. 20.*

## SURVEY OF CERTAIN TOWNSHIP OUTLINES IN THE DISTRICTS OF SUDBURY AND TIMISKAMING.

TORONTO, October 31st, 1919.

SIR,—We have the honour to submit the following report on the survey of certain township outlines in the Districts of Sudbury and Timiskaming, made by us during the past summer, under instructions from your Department, dated 15th April, 1919.

Upon receipt of the instructions, arrangements for the organization and equipment of the necessary party were begun, and, on the 15th of July, a party in charge of T. B. Speight, O.L.S., assisted by R. M. Anderson, O.L.S., was assembled at Kukatush on the Canadian National Railways. The following day part of the supplies was taken from there some distance down the Ground Hog River. Great difficulty was found, however, in obtaining sufficient men of the proper stamp for survey work, owing partly to the abundant opportunities for employment at points along the railways, and partly, to the high prices recently obtained for furs having rendered the Indians, who usually form a large proportion of the party, less inclined to supplement the proceeds of the hunt in this way. It was, therefore, the 18th of July before the survey was commenced, at the north-east corner of the Township of Muskego. The point of commencement had been reached the previous day by a good canoe route of about ten miles from the railway crossing at Winter Spawning Lake, a few miles west of the Ground Hog River. We found the north-east corner of the Township of Muskego marked by an iron post planted beside a wooden post, both of which were marked "IX M" on the south side, and "Muskego" on the south-west side. From this point we ran due east, astronomically, delimiting the south boundaries of the Townships of Melrose and Frey. We intersected the west boundary of the Township of Keefer at chainage seven miles and 3.07 chains from the south-west corner of Frey. Wooden posts of the most durable material obtainable within reasonable distance were planted at the end of every mile on each of the boundaries run, and were marked on the west side with the distance from the south-west angle of the township. In addition, iron posts,  $1\frac{1}{4}$  inches in diameter were planted at the ends of the third and sixth miles in each case. Iron posts were also planted at the south-east corners of the townships, and both wooden and iron posts marked with the names of the adjoining townships.

From the south-east corner of Melrose, we ran eight miles and 73.92 chains due north between the Townships of Melrose and Frey, to O.L.S. Niven's base line of 1899. Wooden posts were planted at every mile, and iron posts at the third and sixth miles. At the intersection of O.L.S. Niven's base line, a wooden post and an iron post  $1\frac{7}{8}$  inches in diameter, both marked "Melrose" on the south-west, and "Frey" on the south-east, and "Eight miles and 73.92 chains" on the south side, were planted.

We then proceeded west to the 45th mile of O.L.S. Niven's line, which we found defined by an iron post and a wooden post marked "XLV M" on the east sides. We ran north, astronomically, from this point, three miles and 54.37 chains to the south boundary of the Indian Reserve surveyed by O.L.S. J. S. Dobie, in 1909.

Returning to the Ground Hog River, we proceeded down it to the north boundary of the Township of Strachan. O.L. Surveyors, Sutcliffe and Neelands had, earlier in the season, run this line from the north-west corner of the township, as far as the west bank of the Ground Hog River, and planted a post on that bank at two miles and 62.69 chains. We continued the line east from this point to chainage eight miles and 78.12 chains, where we planted iron and wooden posts to mark the north-east corner of the township. From there we continued east, astronomically, along the south boundary of the Township of Fortune, eight miles and 66.35 chains to the west boundary of the Township of Cote.

From the north-east corner of the Township of Strachan, we ran south, astronomically, one mile and 20.21 chains, to the north boundary of the Indian Reserve, which boundary we intersected at a point 6.98 chains east of post No. IV on that boundary. From the same corner we ran north, astronomically, nine miles along the east boundary of the Township of Montcalm to the north-east corner of that township.

It became evident at this time that it would be impossible to complete the work described in your instructions this season, owing to the trouble we had experienced and were experiencing in obtaining and holding men, so it was decided not to attempt to complete the north boundary of Montcalm or the lines to the north at this time, beyond doing what work was possible from our camp at this corner. Accordingly, after running two miles to the north, and two miles to the west, we proceeded to run the north boundary of the Township of Fortune to the Township of Byers. The west boundary of Byers was reached at chainage eight miles and 63.71 chains.

We returned to the railway via the Nat and Ground Hog Rivers, reaching the steel on the 16th of September.

All east and west lines were run as chords of the parallels of latitude, passing through the corners of the respective townships.

All lines were well opened up and properly blazed. Wherever possible, cairns of stone were built about the posts planted, and bearing trees, in each case, were carefully marked, with bearings and distances noted. Frequent astronomic observations were taken on Polaris throughout the survey. The notes of a number of these accompany the field notes.

#### GENERAL FEATURES.

Practically all the area embraced by this survey lies in the valley of the Ground Hog River, and its tributary the Nat River. Generally speaking the country is rolling in the southern part, gradually becoming flatter to the north. Along the south boundaries of Melrose and Frey, the line crossed a succession of low to moderately abrupt sandy and gravelly ridges with a few outcrops of granite rock. Between Melrose and Frey, and north of O.L.S. Niven's base line, considerable stretches of flat land were crossed, varied in places by rock and gravel ridges. Few lakes were encountered, nor were any streams of any size crossed with the exception of the two rivers—the Ground Hog and the Nat. Large sections of the townships were burnt, apparently about twenty-five to thirty years ago, and more recent burns were crossed on the south boundary of Melrose, and on the south and west boundaries of Fortune.

## SOIL.

No clay soil was found on the south boundaries of Melrose and Frey, but on the boundary between Melrose and Frey considerable stretches were crossed. This boundary lies between the Ground Hog and Nat Rivers, and the ground was, generally speaking, flat and wet, with clay and sand sub-soil alternating. The section north of O.L.S. Niven's base line showed about 30 per cent. clay soil, most of it light and intersected by sandy ridges. Much of the land was swampy, but there was comparatively little muskeg, the only large muskeg crossed being at the south-east corner of Poulett.

## TIMBER.

Much of this area has been burnt over within the last twenty-five or thirty years, but some good stands of timber were noted. The best timber seen was along the south boundary of Melrose on both sides of the Nat River, where there is a considerable area of exceptionally fine Banksian pine. In this area there are also some heavy stands of spruce of pulpwood size. Along the boundary between Melrose and Frey, the timber, mostly spruce, is generally light, with much balsam and undergrowth. Along the south boundary of Strachan; spruce, poplar, and birch, with occasional groves of Banksian pine, were found, and similar country was encountered as far as mile six of the south boundary of Fortune. Between miles six and seven there are some gravel ridges, which are heavily timbered with Banksian pine, birch, poplar, and scattered Norway pine. Here was the only place we found Norway pine, and at no place did the lines pass through stands of white pine. From mile seven eastward the timber has been burnt off leaving sand hills almost bare except for small groves of spruce and cedar.

Between Fortune and Parke there is a fair stand of spruce and Banksian pine, poplar, and birch, and the timber along the north boundary of Fortune is of the same general character.

## WATER.

The Ground Hog River supplies a good canoe route from the railway as far north as the north limit of the Indian Reserve. Several rapids and a fall of about fifteen feet are capable of supplying considerable power. From near the north limit of the Indian Reserve to well below the crossing of the north boundary of Strachan lie what are known as the Six Mile Rapids, practically continuous swift water.

The Nat River between the south boundary of Melrose and the Indian Reserve, is a sluggish stream with, generally speaking, low marshy banks. Bromley Lake and a large marsh to the south form considerable storage basins. From the Indian Reserve north, there are several rapids and small falls, but the river forms an excellent canoe route to the south boundary of the township of Aitken. The Nat may be reached from the Ground Hog River by several portages; of which the best is about five miles south of the south limit of Melrose.

## MINERALS.

The rocks seen were mostly granite, and the area does not look promising from a mining standpoint.

## GAME.

Moose were numerous, and signs of bear and wolves were noted at various times. Beaver, too, were present in all streams. Pike and pickerel were plentiful in the Nat River, and sturgeon were found in the Ground Hog.

We have the honour to be, Sir,

Your obedient servants,

(Sgd.) SPEIGHT & VANNOSTRAND,

Ontario Land Surveyors.

*The Honourable, the Minister of Lands, Forests and Mines,  
Toronto.*

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*Appendix No. 21.*

SURVEY OF CERTAIN TOWNSHIP OUTLINES IN THE DISTRICT OF ALGOMA.

NORTH BAY, November 19th, 1919.

SIR,—In accordance with instructions from your Department dated April 15th, 1919, we have surveyed certain township outlines in the District of Algoma, and beg to report thereon as follows:—

Commencing our survey at the north-east corner of the Township of Coderre on June 1st, we ran north astronomically nine miles between the Townships of Mons and Champlain; thence west astronomically to O.L.S. Speight's meridian line of 1910. Returning to our meridian, we proceeded across country to O.L.S. Speight's line of 1909, which had been run two miles between the Townships of Mons and Radisson. We produced this line west astronomically to intersect our meridian line. We then continued our meridian line north astronomically between the Townships of Ericson and Radisson and between Cromlech and Usnac, intersecting O.L.S. Speight's base line of 1910, forming the north boundary of Cromlech. From this point we ran the line between the Townships of Usnac and Opazatika east astronomically, returning to our meridian we ran north astronomically between the Townships of Abbott and Opazatika. Returning to the south-west angle of Usnac, we ran west astronomically to the Missinaibi River between the Townships of Ericson and Cromlech and east astronomically between the Townships of Usnac and Radisson to intersect O.L.S. Speight's meridian of 1909 forming the east boundary of Radisson; thence we ran north astronomically between the Townships of Usnac and Oscar and between Opazatika and Bourinot intersecting O.L.S. MacRostie's lines forming the north and south boundaries of the township of Oscar and posting these intersections, returning via Opazatika Lake and portage to the Missinaibi River we picked up our line between Ericson and Cromlech and continued it west astronomically to O.L.S. Speight's meridian of 1910, thus completing the survey.



A large portion, probably 40 per cent. of the eastern portion of the lands traversed by the survey, i.e., the Townships of Mons, Radisson, Usnac and Opazatika and the eastern part of the Townships of Champlain, Ericson, Cromlech and Abbott has been burned over within the last fifteen or twenty years and is covered with a very thick growth of small poplar and birch or spruce and jack pine and alder brush. With regard to the timber the balance of the land may be divided into two classes, i.e., the high land and the low land. The former being generally heavily timbered with white spruce, ranging from 5 in. to 24 in., birch, 5 in. to 16 in., and balsam, 2 in. to 16 in., with an occasional ridge of jack pine, chiefly with black spruce 4 in. to 14 in., and in some places cedar 5 in. to 20 in.

The lines dividing the Townships of Ericson, Champlain, Mons and Radisson indicate mostly sandy land with some areas of good clay land and occasionally a rock ridge. Generally speaking, the townships lying to the north of these are of good clay land, but slightly broken with rock ridges and swamps. Most of the swamps, however, could be drained and are of very fertile soil having from 18 in. to 30 in. of moss and black muck with a clay subsoil. Judging by the numerous varieties of wild fruits which grow abundantly in this country, it is very suitable for agricultural purposes.

No economic minerals were met with. The country rock is generally of a coarse-grained granite of the Laurentian Series, containing numerous veins of quartz and dykes of trap.

There are no water powers of any importance in the territory embraced by this survey, though the Missinaibi River throughout, has a very considerable fall.

Accompanying this report are the usual return of field notes, etc., together with mounted plan and timber plan.

All of which is respectfully submitted.

We have the honour to be, Sir,

Your obedient servants,

(Sgd.) MCAUSLAN & ANDERSON,

Per H. M. Anderson.

*The Honourable, the Minister of Lands, Forests and Mines,  
Toronto, Ontario.*

---

*Appendix No. 22.*

SURVEY OF CERTAIN TOWNSHIP OUTLINES IN THE DISTRICT OF TIMISKAMING.

PEMBROKE, December 12th, 1919.

SIR,—I have the honour to submit the following report on the survey of certain township outlines in the District of Timiskaming made by me under instructions from your Department, dated April 15th, 1919.

On July 2nd, I left Pembroke with my party and proceeded via C. N. Railway and T. & N. O. Railway to Cochrane, thence via C. N. Railway to Low Bush Station where I arrived on the 5th about eleven o'clock and proceeded up Low

Bush River that afternoon and camped at the north boundary of Bowyer Township, about a mile and a quarter east of north-west corner of that township, that being the starting point of my first meridian, the survey of which was commenced on the morning of the 6th, and then run north a distance of fifteen miles in accordance with your instructions. At the sixth mile post I ran west along the north boundary of Findlay Township a distance of six miles, but owing to the north-east corner of the Township of Sweatman coming in open muskeg which has been frequently burned over, I was not able to locate it, and after searching for half a day, returned to the north-east corner of Findlay and ran east along north boundary of Henley Township. I then went down to the corner of Bowyer and Purvis Townships and ran north between Henley and Pliny intersecting my base line at five miles and seventy-eight chains and twenty-six links. I then continued east along north boundary of Pliny Township intersecting the west boundary of Steele Township one chain, thirty-seven and seven-tenth links south of its north-west corner.

I then packed my outfit across the north boundary to the north-east corner of the Township of Steele and ran the north boundary of the Township of Scapa, a distance of six miles, then went south to north-east corner of Bonis Township and ran the east boundary of Scapa north, intersecting my base line at five mile, seventy-eight chains and ten links, I then continued my base line, and established the corner of Abbotsford and Adair Townships at a distance of nine miles from north-east corner of Steele, from here I ran the line forming boundary between Abbotsford and Adair Townships north a distance of nine miles, and returning south to my base line I continued east intersecting the Quebec boundary at a point thirty-six chains and eighteen links north of the one hundred and third mile post. I ran the meridian forming west boundary of Abbotsford Township north from the north-east corner of Steele, a distance of nine miles and then turned east along north boundary of Abbotsford and at chainage eight miles plus seventy-nine chains and five links, I intersected the east boundary at seventy-nine chains and three links north of the eight-mile post. I then continued along north boundary of Adair Township intersecting the Quebec boundary at a point thirty-six chains and forty-five links north of mile post one hundred and twelve, I then packed down the Interprovincial boundary to my southerly base line which I followed west to the old portage on which I went south to the Okikodasik River where I had sent my canoes. We came down this river to La Reine Station on the Canadian National Railway.

Meridian lines were all run north astronomically and base lines east or west on chords of latitude. Wooden posts of the most durable material available, properly marked, were firmly planted at intervals of one mile with iron posts alongside, where shown on plan and in field notes, two bearing trees for each post were taken where available and stones were placed alongside posts when they were procurable within a reasonable distance.

All lines were well opened and properly blazed. Frequent observations for azimuth were taken, a number of which are recorded in the field notes, but owing to the magnetic needle on my transit being out of order, I have not obtained the magnetic variation.

The area embraced by this survey has a total depth of eighteen miles north and south and a breadth of forty and one-half miles east and west.

## SOIL.

Along the base and meridian lines run by me forming boundaries of Findlay, Henley and Pliny Townships, the soil is practically all clay with comparatively small swampy areas covered by deep moss, and the land is suitable for agricultural purposes, this also holds true with reference to my first meridian for a distance of about four miles north of my first base line. The remainder of this meridian is not good land, and on the northerly two miles the soil is mostly sandy with occasional granite outcrops.

Along the base and meridian lines forming boundaries of Scapa, Abbotsford and Adair Townships I do not consider the land suitable for agricultural purposes, about fifty per cent. being sandy soil and of the balance a considerable percentage is swampy.

## TIMBER.

The timber throughout is principally spruce from four to eight inches in diameter with scattered areas of spruce, jack pine and poplar from six to ten inches in diameter, a fairly dense growth of underbrush covers the country generally.

A small area of jack pine up to fifteen inches in diameter is situated in the south-west corner of Abbotsford Township.

Old brule was found on the sixth mile of the north boundary of Findlay Township, on the second, third and fourth miles of the west boundary of Abbotsford Township and along the easterly three miles of the south boundary of Adair Township.

Fresh brule of 1919 origin was encountered on northerly thirty chains of my first meridian, the southerly limit of this fire apparently extended in a southeasterly direction for a distance of about two miles, that being as far as we could see from the high ground just west of the north end of this meridian. I can give no estimate of the distance it extended to the west. Fire also ran through the south-east corner of Adair Township this season, crossing south boundary just east of five mile post and extends southwesterly about two miles, while in a northeasterly direction it extended to Joe Lake, crossing Interprovincial boundary about mileage one hundred and seven.

On August 22nd, we saw smoke rising about three miles to the north of fifth mile post, on north boundary of Adair Township.

## MINERALS.

No indications of economic minerals were noted.

## STREAMS AND LAKES.

Low Bush River is navigable by canoes from station of that name on Canadian National Railway to where it crosses north boundary of Findlay Township, there being three short portages in Boyer Township and one in Henley. Circle River is also navigable by canoes from Low Bush Station, the first portage being about a half mile south of north boundary of Pliny Township and I understand there is a long portage commencing about thirty chains north of this boundary. I understand that Mud River which runs along west boundary of Abbotsford is occasionally used as a canoe route but we did not use canoes there.

Patten or Woman River flowing through Township of Adair is a stream of considerable size, has its source in Province of Quebec and flows through Joe Lake near south-east corner of Adair Township, thence in a north-westerly direction crossing the north boundary of that township about one mile east of the north-west corner, where it is between three and four chains wide, but we did not use it as a canoe route. From Joe Lake there are two portages south to the Okikodasik River. The one crossing the south boundary of Adair near the five mile post is the shorter and is used by the Indians in high water, this portage is very wet and swampy; the other is the older and longer portage and crosses a high granite ridge and strikes the river about two miles lower down. The Okikodasik River is navigable by canoes from both of these portages to La Reine Station on the Canadian National Railway, there being five or six portages varying from five chains to thirty-five chains in length.

There are no water powers capable of development.

#### GAME.

Game was very scarce, only a few moose being seen during the season, and only occasionally evidence of beaver noticed.

Generally speaking, the Townships of Findlay, Henley and Pliny appear to be suitable for agricultural purposes, with a fair amount of timber suitable for pulpwood. I do not consider the Townships of Scapa, Abbotsford or Adair suitable for agricultural purposes, but there is considerable timber of pulpwood size throughout these townships, but the streams practically all flow north.

Accompanying this report are a plan and field notes of the entire survey, with accounts in triplicate, and the customary affidavits.

I have the honour to be, Sir,

Your obedient servant,

(Sgd.) HERBERT J. BEATTY,  
Ontario Land Surveyor.

*The Honourable, the Minister of Lands, Forests and Mines,  
Toronto, Ont.*

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#### *Appendix No. 23.*

#### TRAVERSE OF THE SHORES OF CHARLESTON AND RED HORSE LAKES AND OF THE ISLANDS THEREIN.

SMITH'S FALLS, November 10th, 1919.

SIR,—In accordance with your instructions dated the 8th day of May, 1919, to make a traverse of the shores of Charleston Lake and Red Horse Lake and of the islands in each, I have the honour to transmit herewith my report, plan on linen on a scale of 20 chains to the inch, field notes and affidavits, etc., in connection therewith.

5 P.M.



After a few preliminaries, I commenced my survey of the traverse of the shore of Charleston Lake on the 3rd day of June, from an iron pin planted on Slack's Point, near the intersection of the 11th concession line with the shore. I ran easterly and southerly from this point to the outlet reach, and then came back and continued the traverse westerly and southerly to this same reach.

On the opposite shore from the iron pin at the outlet four feet above, which marks the height to which the Gananoque Water Power Company may hold the water in the lake, I established a bench mark, a cross in the rock, Station 123 of my traverse, which is seven feet and three inches above the iron pin.

The Power Company are entitled to keep the water four feet above the iron pin.

The astronomic bearing and distance of this bench mark from the iron pin is north 57 degrees 49 minutes east 73 feet.

On August 19th, I ran a line of levels from the shore of Donaldson's Bay in Charleston Lake, to the easterly shore of Red Horse Lake, following along the portage, and found the elevation of the water surface in Red Horse Lake to be 3.69 feet lower than the surface of the water in Charleston Lake.

I fixed a bench mark on a maple tree near the shore of Red Horse Lake, as shown by the notes, and also one on the rock surface, Station H, eight feet westerly therefrom.

As shown by the attached index there are 133 islands in Charleston Lake and ten islands in Red Horse Lake.

Most of the desirable islands in both lakes appear to be claimed by some person or other. The information furnished me on the ground was to the effect that Mr. Joe Banta, a wealthy American, owns several islands including Sheep Island, on which he has his summer home. I was unable to locate Sheep Island on the plan furnished me by the Surveys Branch, but concluded that the small one directly south of Orange Island must be intended for it. This is probably the most valuable island in the lake from the viewpoint of location, trees and timber, and general appearance. It was formerly the property of the late Walter Beatty, O.L.S. Mr. W. Parish, of Athens, is also the owner of several islands. He has his summer home on Little Bluff. Rabbit Island is partly cleared and cultivated, and the remainder is covered with second growth pines and other small timber. William Crozer appears to have squatted upon this island some years ago, cleared up part of the island, built a house and barns upon it, cultivated the cleared portion, and raised his family there.

I have divided the lower or southerly end of what was known as Democrat Island into two new numbered islands, viz., 11 and 12.

There was a separation by water from the mainland at the places shown on the plan to justify making separate islands of these two. J. Mulvenna, of Athens, has a cottage on the southerly end of No. 11.

I cannot find any islands in the lake to correspond with what is marked on the Department's plan as "Hobson's Choice." There are only five small islands in this locality; three of these, viz., Grape and Twin Islands are owned by Norman Dowsley, and "Heart's Delight" and "Happy Thought" by John R. Wemple. Bear Island near these is owned by E. Donovan, M.P.P.

As will be noticed by the plan the sideline between Lots 15 and 16 intersects the 10th Concession on the westerly shore of the lake.

I have renewed the high water mark cut on the rocky shore between Charleston and the Townline Road Allowance between Escott and Lansdowne, by Willis Chipman, C.E., some years ago.

I placed a water gauge on the wharf on Bertha Island at the commencement of my work, and from then, that is about the first of June until the 4th of September, the water had fallen by  $2\frac{1}{2}$  feet.

I have shown the principal shoals by a small cross for each on the plan.

I am also enclosing with my field notes and report, my diary, as directed in your instructions.

I have the honour to be, Sir,

Your obedient servant,

(Sgd.) S. B. CODE,  
Ontario Land Surveyor.

*The Honourable, the Minister of Lands, Forests and Mines,  
Toronto, Ontario.*

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*Appendix No. 24.*

SURVEY OF WINDY LAKE, IN THE TOWNSHIPS OF DOWLING AND CASCADEN,  
DISTRICT OF SUDBURY.

NORTH BAY, May 27th, 1919.

SIR,—The survey of Windy Lake in the Townships of Dowling and Cascaden, performed under instructions from your Department of February 21st last, has been finished and we are sending you herewith our plan of the same and our report.

Governed by those instructions we ran a close inshore traverse of the lake, carrying continuous azimuth and station to station chainage.

The original survey lines were picked up at their shore intersections and marked at these points by iron posts, on which posts were carved the distinguishing lot and concession numbers. Certain other prominent points on the shore line were also marked by iron posts and these posts were consecutively marked "I.P.1," "I.P.2," etc.

No trace of the original line between Lots 2 and 3, Concession IV, Cascaden, could be found except on Green Island and at the mainland immediately north and south of it.

Islands were also tied into the traverse, and on each island a squared tree or stump was likewise marked "R.P." with a designating number.

The contact line between the Laurentian and the nickle eruptive series was delineated across the ice and for a distance of 10 chains on each side thereof soundings were taken at five chain intervals, while throughout the rest of the lake similar soundings were taken at ten chain intervals, east and west, by twenty chains north and south.

No traverse was made of the C.P.R. track, but a copy was made of the revised plan from the company's own survey and this is included in our returns. The track was tied in to our traverse at one point.

The level of the lake as at March 27th, 1919, stood at 1,106.7 feet above mean sea level, deduced from C.P.R. base of rail at Windy Lake Station, there

being no other available bench mark from their records. This base of rail elevation 1,233-0 is recorded in "Canadian Altitudes" last edition.

A profile of the soundings is also included showing the depths of these soundings except those along the contact line, and indicated from west to east by consecutive numbers and each line is indicated alphabetically from north to south.

An imaginary base line was run from point number 2 on the traverse south astronomically and the numbers are indicated by a plus sign if to the east of that line and by a minus sign if to the west.

Field notes are included showing the length and azimuth of each course, the stations being numbered consecutively from 1 up. Shore offsets are shown together with ties to all the iron reference points.

We trust all returns may be found in order.

We have the honour to be, Sir,

Your obedient servants,

(Sgd.) MCAUSLAN & ANDERSON,

Per H. M. Anderson.

*The Honourable, the Minister of Lands, Forests and Mines,  
Toronto, Ontario.*

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### *Appendix No. 25.*

#### SURVEY OF LOWER AND MIDDLE SHEBANDOWAN LAKES.

PORT ARTHUR, March 22nd, 1919.

SIR,—I beg to report as follows on the survey of Lower and Middle Shebandowan Lake undertaken in accordance with your instructions of September, 1917, for the purpose of ascertaining the area of the lake, the contour of the shore line and islands therein.

As previously reported the very early advent of winter and unusually stormy and wet weather rendered it impossible for me to continue the field work without serious loss and impairment of efficiency. Micrometer work was consequently abandoned, as approved by your Department, and survey resumed with stadia measurements in the following spring on the ice.

As you will notice by the field notes every detail in the shore line has been carefully outlined—the number of measurements being in excess of the actual requirement of the instructions. The chief difficulty lay in tracing out the lines and posts of the old Mining Location Surveys, an especially difficult matter when the snow is deep. Many could not be found. Their proper position on the map can, however, be readily approximated by the interaccordance of the two outline surveys. Hereafter an explorer or prospector will find no trouble, by means of this map, in locating his find so that the area intended will be distinctly evident and the work of the Department likewise greatly lightened. Delay in making out the more than usually intricate set of field notes and plan occurred by my

appointment as Registrar for this District under the "Canada Registration" Act, also as supervisor for the subsequent "Resources Committee" work. The urgency of "winning the war" tempted me to undertake these responsibilities. The loyalty of this District becomes conspicuous when I state that, with the exception of only three specially avidious workers, the numerous deputies and other officials volunteered their services free of cost. Another unfortunate delay was caused by the accidental omission by one of my assistants to record one of the larger (5 chain) stadia rod divisions, causing a break in the survey, which was not found out and corrected until much time and labour had been expended.

I discovered amongst the effects of the late S. J. Dawson, C.E., of Dawson Route fame—a large (800 foot to an inch) plan of Shebandowan Lake, being a trigonometrical survey made by the then (1869) Department of Public Works of Canada. This plan is very unsatisfactory and highly erroneous in many places but the long distance trig. measurements afford a good check on the stadia and micrometer survey. The extremes in sixteen miles apparently coincide very closely with my plotting, as you will observe on comparing the reduction to 20 chains to an inch, which I made and forwarded with my original plan—the original is available if desired.

As over sixty-two (62) islands, many very small, had to be surveyed and tie lines run to them, the work occupied more time, both in the field and office than was anticipated.

The total mileage of shore line of main land was:—

Mainland .....	68.30 miles
Islands (shoreline only) .....	14.17 "
Total .....	82.47 "

The results of observations and stadia and micrometer comparisons are shown at various intervals in the field notes. There is a small dam at the outlet of Shebandowan Lake to assist in lumbering operations. Its height is necessarily limited—a further increase would endanger the National (C.N.O.R.) Railway roadbed besides affecting mining and summer resort properties. In future patents it might possibly be well to guard against any claims which might arise from a slight increase in level for hydro-electric storage purposes.

I have the honour to be, Sir

Your obedient servant,

(Sgd.) ALEX. L. RUSSELL,

Ontario Land Surveyor.

*The Honourable, the Minister of Lands, Forests and Mines,  
Toronto, Ontario.*



*Appendix No. 26.*

## SURVEY OF BASE AND MERIDIAN LINES IN THE DISTRICT OF THUNDER BAY.

FORT WILLIAM, ONT., January 23rd, 1919.

SIR,—I have the honour to submit the following report on the survey of base and meridian lines in the District of Thunder Bay, carried out under your instructions dated the 14th of June, 1918.

Before the receipt of my instructions I was notified that this was to be a cruising proposition as well as a survey, and was instructed to find a cruiser. I spent at least two weeks endeavouring to secure a satisfactory man for the work. I hired two men for this purpose, but both cancelled the arrangements made, one two days before the date set for leaving, after shipping arrangements and connections for the men had been made. In this awkward situation I was fortunate in engaging at the last moment so desirable a man as Mr. Ben Howson for the work.

Immediately after receipt of my instructions I proceeded to Whitefish Lake with a small party, located my starting point, took an observation for azimuth and carried the line across Whitefish Lake. It will be noted that the line strikes at the mouth of Sucker Creek, which flows in from the west, and not on the headland as shown on the compiled plan accompanying the instructions. Several of the lines strike points considerably different and at different distances from those shown on this plan, particularly on the boundary waters.

Returning to the city I completed the organization and equipment of my party, and proceeding once more to Whitefish, had my party and outfit taken down the lake to a point convenient to Sucker Creek. From this point the line was carried south in accordance with the instructions.

The country was so mountainous, however, that it was impossible to move the whole outfit along the line, particularly with the men available, and I made arrangements to have the outfit and party moved back up the lake to the Old Pigeon River Lumber Company's tote road. A raft was built and horses brought across the lake, and a waggon hauled through the water close to shore from a point some two or three miles above the road. The whole party was then set to brushing out the road, laying corduroy, re-building bridges, etc., and the outfit was hauled to old Pigeon River Company's Camp 3, where we camped for some days.

The line work was then proceeded with according to instructions, but throughout the first half of the survey the country was so rough that nearly all moving was done along the old trails which I opened up, in many instances at considerable distances from the work, involving long walks and lost time and slow progress.

Labour conditions were such, both as to the securing of men and getting them to camp—owing to the phenomenal wages then being paid in Fort William on war work being done on a percentage basis, and which eventually proved a disturbing factor in labour conditions from coast to coast—and the keeping up of camp supplies in the rough country with the shortage of men who could pack anything was becoming such a serious problem, that I engaged the services of Mr. John Shaw, O.L.S., to assist me in the work, when about half was completed.

From this time I devoted myself more particularly to securing bushmen and the forwarding of supplies, but even so, only for a very short time were there

enough men available to run double party.

The weather throughout was exceptionally fine, and was possibly responsible for the comparative absence of fly pests. On the other hand, in a rocky, hilly country, continued dry weather made the water problem serious, and it became necessary to procure closed vessels to carry water along the line for use during the day and at meal time.

Before commencing the work the chainmen were well posted in their work, but frequent change of the front chainman after the original man gave out through exhaustion made constant watchfulness and checking necessary.

The lines will be found to be well opened, well blazed, and with large well marked posts planted throughout, and bearing-trees well chosen and marked where such were at all available.

All points required by the instructions were marked by iron posts, except at Mountain Lake. A raft broke up on the Arrow River, and this post with other things was lost. At this point, however, I personally constructed a stone cairn almost as high as the post, and in a well protected position.

The traverse of the part of the south shore of Whitefish Lake was left by arrangement to be done on the ice. An attempt was made to carry out this work during the week before Christmas, but owing to the peculiar winter weather, including heavy rain, this had to be abandoned, and this work was only recently completed.

Watch was kept for signs of old survey lines throughout the progress of the work, but at only one point were lines and post found. Connection was made, however, at the termination of all lines where such existed with international or township boundaries.

Observations for azimuth were taken at least once on each line. Observations on the sun for time were frequently taken.

#### SOIL.

All lands of an agricultural nature are shown on the plan of survey coloured brown. These areas are carefully plotted not only from the field notes of survey, but from the observations made by the cruiser. The greater part of the lands passed through or cruised are totally unfit for agriculture, being mostly rock, sometimes bare, but usually with a shallow covering of leafy loam.

The agricultural land referred to consists mostly of clay, white to light brown in colour, and clay loam. Except in some wet areas there is not heavy moss. As the hills are approached stones and boulders are met in increasing quantities. Frequently in the larger clay area patches were seen several acres in extent where fires had removed most of the timber, and very little clearing was necessary before ploughing could be done.

In some of these patches and along the old tote roads clover and timothy grew splendidly.

#### MINERALS.

The rock throughout the greater part of this country is granite, hornblende rocks being found in the south, while east of South Fowl Lake there is considerable showing of low grade iron. The variation of the compass going round the sharp point on the south shore of Whitefish Lake near its east end, differences of 25 deg. being noted in going half a mile round the point, would indicate bodies of iron ore.

## TIMBER.

This whole country has been lumbered over at a comparatively recent date. Nearly all of it shows signs of having been burnt over at some period. There is practically no valuable timber apart from what is now being taken out immediately south of Whitefish Lake. There are odd clumps of trees to be met with, at one or two points considerable parcels of white pine, as on the range of hills south of the first mile of the line running west to South Fowl Lake, but these are usually so situated as to make their removal a losing proposition, though in the future, settlers may find it worth while to cut and remove for their own use.

The country is covered principally by small birch and poplar. On the first meridian immediately south of the Arrow River is a small area of spruce that would make pulpwood were it more accessible and of a larger area.

## GAME.

There was seen but little trace of the small fur-bearing animals, mink, marten, etc., but bears are very plentiful, as are moose; there were some red deer seen. Beaver are the principal occupants of the region, in fact, not a member of the party had seen them so plentiful elsewhere. At nearly every point where there was enough water available beaver dams were to be seen; at times several, one above the other, on the same stream. There are beaver houses along the Arrow River. In fact, the one thing the westerly part of the territory is suitable for is a game preserve.

There are numerous trails throughout the country covered, opened up originally by the various lumber companies who have operated here. Most of these have grown up considerably with brush, and are obstructed by fallen logs, but should it be decided to lay out the agricultural area for settlement a little attention would make these available for the first needs of the settler, the South Fowl Lake Road and the road north of the Arrow River as far as the dam in particular, requiring little to make them at least travelable; in fact, they were both travelled this last summer, but would be better for some attention in the wet spots.

The "Hospital" bridge, over which the former road crosses the Arrow River, is still in fair condition, and well worth taking care of.

I am forwarding herewith field notes of survey and lake traverse, plan of survey, plans of traverses, timber plan, affidavits, etc., and trust that everything upon inspection will be found satisfactory.

All of which is respectfully submitted.

I have the honour to be, Sir

Your obedient servant,

(Sgd.) E. R. BINGHAM,  
Ontario Land Surveyor.

*The Honourable, the Minister of Lands, Forests and Mines,  
Toronto, Ontario.*

*Appendix No. 27.*

## SURVEY OF A MERIDIAN LINE IN THE DISTRICT OF KENORA.

LITTLE CURRENT, ONT., October 1st, 1919.

SIR,—I have the honour to submit to you the following report on the survey of a meridian line in the District of Kenora under instructions from your Department dated Toronto, April 15th, 1919.

I commenced the work on the 12th of June at the iron posts at the north-west angle of the Township of Rowell, as directed, with a party of 18, composed of 9 from this vicinity and 9 from the Lac Seul country. My intention was to add to the party, Indians, as guides and canoe men, after crossing Lac Seul, and for which I had arranged with the Hudson's Bay Co.

Owing to the Winnipeg strike which interrupted seriously the transportation of supplies on the Canadian Government Railways, I was unable to proceed earlier with the work.

The line was continued to the north shore of Lac Seul, a distance of 33 miles and 5 chains, which point was reached about the 10th of July. Here the Indian packers from the Lac Seul country refused to proceed any further—three of them had deserted some miles back—and of the canoe men and guides arranged for only three arrived. They also intimated that they could remain only a few weeks. An effort was then made to obtain more help at the Lac Seul and Pine Ridge posts, but hardly any good men appeared to be available. Finding, therefore, that I would probably not be able to proceed much farther this season, and being much broken in health, I concluded to discontinue the work for the time.

At the end of each mile a wooden post 6 inches square, of the most durable wood convenient was planted and marked on the south side the number of miles, as 1 M., etc., from the initial point. In addition to this at the end of every third mile an iron post  $1\frac{1}{4}$  inches in diameter was planted beside the wooden one and similarly marked. Where a mile came in a lake a post was planted on the nearest shore and the miles and chains marked on it. Two bearing trees were also marked at every post, all of which was duly entered in the field notes.

The line was well blazed in the usual way—a blaze on the side of the tree facing the line and on the north and south sides of it.

Frequent observations of Polaris were made to check the bearing of the line which was projected north astronomically.

The first mile is mostly large timber, the swamp areas containing much black spruce and some cedar, and the higher ground jack pine, poplar and balsam.

From the 2nd to the 16th miles the country is principally brule, on the high land, with a growth of jack pine, birch, spruce, balsam and poplar about 3 inches in diameter. In the lower tracts which escaped the fire there is considerable black spruce up to 12 inches in diameter. Between Ord and Miller Lakes, in the 6th mile, there is big green timber. From the 16th mile to the end of the work it is mostly big timber of the same kind and quality. In many places there is some good cedar.

The entire country traversed appears to be red granite and destitute of mineral.

Rocky ridges with sand, boulders and gravel interlying are the main features up to the 17th mile where the south cove of Lac Seul was intersected. From



the 17th mile to the end of the line there is considerable clay land and probably a sufficient area of it might be found fit for farming settlements.

I enjoined on every member of my party the necessity of great care being exercised in order to prevent fire.

Moose and deer abound, also the smaller game, and fish.

I have the honour to be, Sir

Your obedient servant,

(Sgd.) T. J. PATTEN,  
Ontario Land Surveyor.

*The Honourable, the Minister of Lands, Forests and Mines,  
Toronto, Ontario.*

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*Appendix No. 28.*

SURVEY OF THE BLACK STURGEON RIVER PULP AND TIMBER LIMIT, IN THE  
DISTRICT OF THUNDER BAY.

PORT ARTHUR, ONT., December 9th, 1919.

SIR,—We beg to report that in accordance with your instructions dated June 21st, 1918, we have completed the survey of the south boundary, west boundary and part of the north boundary of the Black Sturgeon River Pulp and Timber Limit.

This survey was commenced from the north-west angle of the Township of Hele, where an iron post  $1\frac{3}{4}$  in. in diameter and a cedar post were planted by M. E. Crouch, O.L.S., in 1916. From this point the south boundary was run west astronomically a distance of thirty miles, fifty-one chains and twenty-one links to the south-west angle of the limit. This line was run in chords of six miles, with reference to a meridian through their central points, the deflections being made at the 7th, 13th, 19th and 25th miles. The west boundary was run north astronomically, from the south-west angle, a distance of twenty-eight miles to the north-west angle of the limit. From the north-west angle the north boundary was run east astronomically a distance of twenty-one miles, eleven chains and forty links to intersect the high water line of McIntyre Bay of Lake Nipigon. This boundary was run in chords of six miles with reference to a meridian through their central points, the deflections being made at the 6th, 12th, and 18th miles. A careful stadia traverse was made of the shore line of McIntyre Bay from the point where our line intersected it to the west boundary of the Township of Innes. Frequent astronomical observations were taken to verify the accuracy of the direction of the line.

Wooden posts were planted according to instructions, the first post on the south boundary being planted at chainage fifty-one chains and twenty-one links and this chainage was marked on the post. Thereafter posts were planted at intervals of one mile, the next post being marked "2M" and so on to the 31

mile post. The posts on the west boundary were marked from 1 to 28 from south to north and on the north boundary from 1 to 21 from west to east, the final post being marked "21M 10 chains" and being planted at the chainage. Iron posts  $1\frac{1}{4}$  in. in diameter were planted at intervals of three miles from east to west on the south boundary, from south to north on the west boundary and from west to east on the north boundary. Iron posts  $1\frac{3}{4}$  in. in diameter were planted at the south-west and north-west angles of the limit and a chainage 21M 10 chains on the north boundary. These posts were all marked with the mileage at which they were planted.

The ends of the 21st and 29th miles on the south boundary and the 13th on the west boundary came in places where it was impossible to plant posts. The first two being in lakes, the posts were planted on the nearest shores. In the third instance the mile point came on top of a large boulder and the post was moved forward. These posts were marked with the chainage at which they were planted.

#### SURVEY LINES.

The only line established by an Ontario Land Surveyor encountered was a meridian run by A. H. Macdougall, in 1903. This was intersected by our south boundary at chainage 6M 51.805 and the distance to the nearest mile post was ten chains and thirteen links to the south, the post being marked "XIV M." This line was also found at its intersection with McIntyre Bay, or the closing point of our survey.

Other lines found were numerous trial lines surveyed by the Canadian Pacific Railway Company, about eight years ago, in an endeavour to locate suitable grades for a railway from Nipigon to Savanne. The direction of these lines was not noted but the chainage of those intersecting our lines are indicated in the field notes.

#### TOPOGRAPHY.

The region in the vicinity of the Black Sturgeon River is very rough, the river valley being about four hundred feet deep with summits from twenty chains to three miles inland. For two miles after crossing Sucker Creek the land is fairly level and from here west to the Spruce River is a very rough broken country with hills from fifty to three hundred feet high. The land along the west boundary is not rough but has a continual slope to the north. There would be a drop of about six hundred feet in this line. On the north boundary from the Poshkokagan River to the north-west corner of the limit there is a slope to the east. East of the Poshkokagan River to the portage from Lake Nipigon to Black Sturgeon Lake is fairly level and from the portage east to the twenty mile post is a high rocky country the slope being to the south. East of the twenty mile post is nearly level.

#### SOIL.

On the south boundary the best soil found was from about the 3rd mile post to the 6th mile post. This graded from sandy loam at the east to a red clay loam on the west. The subsoil is clay. West of here to the Spruce River the country was nearly all rocky and the soil either light or very stony. West of the river good land was again found. This area extended from the 25th mile to the 28th and is nearly all a sandy loam. On the west boundary good

soil was found along the greater part of the line. The best areas are from the corner to the 10th mile post and from the 17th mile to the north-west corner and of these areas the first mentioned is probably the better since in the latter there is a considerable area of swamp land. Between the 10th and 17th miles the soil, though good in places is mostly rocky. On the north boundary good land was found from the north-west corner to the eleventh mile and east of this to the 20th mile is mostly all rocky. The remaining part is fairly good though rather stony.

#### ROCK FORMATION.

The predominant formation is diabase. Intrusions of the red stones of the Nipigon Formation were observed in places. Banded granite was found in the hills east of the Spruce River. No minerals of economic value were found.

#### TIMBER.

The country within the limit is nearly all well timbered, the only burned over area observed being between the 11th and 15th miles on the north boundary. This was burned in 1917 and nearly all the timber was destroyed. A fire of considerable extent has passed over portions of the limit about forty years ago. The second growth timber on these portions extend from the 19th mile to the 26th mile on the south boundary, from the 11th mile to the 21st mile on the west boundary (areas of large timber intruding in places here), and from the 10th mile to the end of the line on the north boundary. In these areas the young growth on the higher lands is mostly birch, spruce, jack pine and poplar, the amount of each being in the order mentioned. On the low land the predominant species is spruce. The average size of the timber would be about four inches. The remaining portions of the line are well timbered with spruce, birch, poplar and jack pine with considerable balsam. The average size would be between seven and ten inches. The spruce is the species occurring most often in the blocks of any value. The largest areas of this species on the south boundary are between the 3rd mile and the 6th mile and between the 26th mile and the south-west corner. Here the timber is very suitable for pulpwood on the lower land and on the high land for logs and piling. On the west boundary good spruce is found from the south-west corner to the 11th mile. This is larger than that on the south boundary but there is a considerable amount of it blown down by wind. From the 21st mile to the northwest corner is a better stand, this area containing many swamps where spruce is the only species found. On the north boundary it extends from the north-west corner to about the 10th mile and here the best spruce was found. There appeared to be a very large area of spruce swamps to the north of the line here and also extending to the west for several miles. Two areas of jack pine were noticed, the first being from the 5th mile to midway between the 6th and 7th miles on the south boundary and the second along the 17th mile on the west boundary. No white pine of value was seen.

#### ROUTES, WATERWAYS, ETC.

The main rivers draining the Limit are the Black Sturgeon, Nonwatin, Spruce and Poshkokagan. The Black Sturgeon is the outlet of the Nonwatin and Spruce and is the most important one. It is navigable by canoe at all seasons and would require very little improvement for driving timber. The

Spruce is very shallow and can be used to advantage for canoeing only in the early summer months. It was necessary for us to use it, however, and from Little Sturgeon Lake to the south boundary of the limit between twenty and thirty portages were cut out. The Spruce is joined by a smaller stream, the Eaglehead River about eight miles from the south boundary. The Poshkokagan River appears to have a greater flow than the Spruce. It was only used from Chief Bay to the north boundary of the limit (about ten miles) and in this distance there are only two portages and both are short. The portages further up the river are well cut out and are used by Indians in the spring.

Black Sturgeon Lake was made the supply base for the performance of the survey. Supplies were brought here via Lake Nipigon and were cached with the forest rangers. The main party was taken in via Black Sturgeon River and the first meet with the packers made at the Spruce River.

#### WATER.

All water was free from alkali. The water in all the lakes was clear and clean while that in the rivers and small creeks was dark in colour but had no objectionable taste or odour.

#### GAME.

Moose are plentiful in all parts and particularly near the Black Sturgeon River. No caribou tracks were seen but signs of deer were noticed on the north boundary.

Beavers are the most numerous fur bearing animals and nearly all creeks and lakes showed indication of their work. Bears are also numerous along the Black Sturgeon River but further in no signs of them were seen. The Indians report lynx, fisher, mink and fox in abundance, but rabbits, partridge and wolves are almost extinct.

The lakes and rivers are well stocked with fish, pike being the most numerous. Black bass are found in the Black Sturgeon River and in Black Sturgeon Lake. The waters tributary to Lake Nipigon are nearly all good trout streams.

The magnetic variation remained fairly constant at one degree and twenty-five minutes to one degree and thirty minutes.

The maps supplied by your Department were found to be very reliable in most cases as also were those of the Geological Department of the Dominion Government.

We have the honour to be, Sir

Your obedient servants,

(Sgd.) PHILLIPS & BENNER,

Per J. K. Benner.

*The Honourable, the Minister of Lands, Forests and Mines,  
Toronto, Ontario.*



*Appendix No. 29.*

## SURVEY OF THE TOWNSHIP OF WILLIAMSON, IN THE DISTRICT OF ALGOMA.

PARRY SOUND, October 15th, 1918.

SIR,—I have the honour to submit the following report on the survey of the Township of Williamson, in the District of Algoma.

This township is bounded on the south by the Township of Owens, surveyed by O.L.S. Anderson in 1917, on the west by the Township of Idington, surveyed by O.L.S. Dobie in 1917-18, on the north and east by the unsurveyed Townships of Nixon and Teezel, respectively. The National Transcontinental Railway crosses the south boundary about seventy-six miles west of Cochrane near the corner of lots eleven and twelve, a short distance west of Secord Station, and bearing in a direction a little north of west, crosses the west boundary in the fourth concession. It is therefore well supplied with railway facilities.

I commenced my survey by chaining and posting the south boundary, making the lots the width shown in the field notes and from this boundary meridians were projected north astronomically in the centre of the road allowances, between lots six and seven, twelve and thirteen, eighteen and nineteen and between lots twenty-four and twenty-five.

The centre lines of road allowances between the concessions were run as chords of latitude making the depths of the concessions as shown on plan and in the field notes, the survey being carried on in accordance with instructions; the lines being well cut out and blazed and substantial wooden posts planted at the corners of the lots with guide posts in the centre of the road allowances between the concessions opposite the lot corners. Bearing trees were marked for all lot posts as recorded in the field notes. Iron posts were planted alongside wooden posts where directed and their location is shown on plan and recorded in the field notes. I endeavoured faithfully to carry on my survey throughout in accordance with my instructions and the results in detail are shown on the plan and recorded in the field notes. Frequent observations for azimuth were taken, the magnetic variation being about seven degrees and fifteen minutes west of north.

A road allowance one chain in perpendicular width was laid out on each side of the right of way of the Transcontinental Railway, on each side of Lost River and around the lakes shown. I made a careful traverse of Lost River, the course of which is very crooked, particularly in the first eight concessions, this stream has a considerable volume of water during spring freshets and early summer, and is navigable throughout by loaded canoes, but in August it became very shallow and had very little water in it so that we had difficulty moving our outfit up to the railroad, although canoes were not heavily loaded. That part of the river between lot fourteen, concession seventeen and the north boundary as well as that flowing through concessions eighteen to thirteen is obstructed with boulders in many places and must be rather turbulent in high water. I understand that the fire rangers travel up this river from the Kapuskasing to the railway. During August the water did not appear to be safe for drinking purposes without boiling.

## TIMBER.

The township is thickly covered with timber and fire has run over about six per cent. of it, there being two small brules in the south-east corner, covering about four hundred acres, there is also between six and seven hundred acres

burned over in the south-west corner of the township and the largest area extends easterly from the west boundary in concession nine and covers an area of about two thousand acres. About fifty per cent. of the township is covered with spruce swamp with deep moss, the timber being from four to seven inches in diameter, the balance is principally spruce, poplar, balsam and white birch from four to twelve inches in diameter, the timber plan accompanying the report shows the different areas as accurately as could be ascertained during progress of survey. The largest timber being located east of Lost River, concessions one to six, inclusive.

#### SOIL.

The soil generally is clay, about fifty per cent. of the area being covered with moss from six inches to two feet in depth and the balance with little or no moss. I estimate that about seventy-five per cent. is suitable for development for agricultural purposes but it will require considerable drainage, the highest area is along the railway and in the south-easterly portion of the township.

#### MINERALS AND ROCK.

No indications of economic minerals were observed and comparatively few outcrops of rock were noted. A small quarry was opened on lot seventeen, concession three, on the east side of Lost River by the railway contractors. There are frequent rock outcrops in the bed of river in lots twelve and thirteen, concession eighteen.

#### LAKES AND STREAMS.

Lost River varies in width from about one chain near the south boundary to one and one-half chains at the north and east boundaries. It has a good strong current during times of freshet and is rapid from concession seventeen to the north boundary and where it flows through the easterly part of township. Freshet level is about six feet higher than low water level and there are no falls within the limits of this township. There are only a few small lakes and they are shallow with low banks.

#### FISH AND GAME.

The fishing is rather poor but during June and July we caught a few fair sized pike in Lost River and Solomon Creek and I understand pickerel and pike are plentiful in some of the lakes, particularly in the one on lots nineteen and twenty, concession five.

Moose were very plentiful along Lost River.

In conclusion, I consider that about seventy-five per cent. of this township will be available for agricultural development, the timber being chiefly valuable for pulpwood. Summer frosts occurred throughout the season which was a cold one, in places we found that the frost did not go out of the ground this year.

Accompanying this report are a timber plan, general township plan, field notes, account in triplicate and the customary affidavits.

I have the honour to be, Sir

Your obedient servant,

(Sgd.) DAVID BEATTY,

Ontario Land Surveyor.

*The Honourable, the Minister of Lands, Forests and Mines,  
Toronto, Ontario.*

*Appendix No. 30.*SURVEY OF TOWNSHIP OUTLINES BETWEEN GROUND HOG AND KAPUSKASING  
RIVERS, IN THE DISTRICT OF TIMISKAMING.

NEW LISKEARD, ONT., August 30th, 1919.

SIR,—Under instructions to us from Mr. L. V. Rorke, Director of Surveys, bearing date April 15th, 1919, our Mr. Neelands proceeded to Foleyet on the Canadian Northern Railway, May 19th, and personally conducted the survey up to the time of its completion, July 10th. The party was supplied and outfitted by Mr. Henry Charron, Foleyet, and everything found satisfactory. Through the courtesy of Mr. Cyril T. Young, Supt. of The Eastern Lands Co., our supplies and equipment were delivered at Sandy Lake, two miles west of Foleyet, from which point a good canoe route via the Pishkanogama River led directly to our starting point—the 63rd mile post on the late O.L.S. Niven's base line, N. lat. 48 degrees, 27 minutes, 54 seconds; longitude 82 degrees, 26 minutes west.

Sun and stellar observations were taken May 25th and 26th, at the post marked 63 M. 2 chains on the west bank, the 63 Mile Post coming in said river; and the two chain offset made to the east and the meridian started the latter date. A wooden post and 17/8 in. iron post was planted on the north bank of the river 1.15 chains due north of said 63 M. point in river and wooden posts planted every mile and marked consecutively on the north side, while 1 1/4 in. iron posts were planted beside every third mile post except at township corners where 17/8 in. iron posts were planted.

Our assistant, a returned man, was unable to handle the instrument, due to the rough nature of the ground in places and the extreme heat, but rendered valuable service in keeping notes copied and checked.

Our original intention was to keep a small party on the meridian while a larger party took the east and west lines, but circumstances made it compulsory to conduct only one party. The 15 mile lake and the innumerable watercourses with which the country was reported to abound in, evaporated and we were forced to abandon canoes and use the pack strap to the end of the work.

After the meridian had been run 9 miles, we ran east on a 9 mile chord of a parallel of latitude intersecting the Pishkanogama River 13/4 miles east of said meridian, and planting posts as indicated above, except that a wooden and 17/8 in. iron post was left at the 9 mile point with only township names thereon to be moved to the intersection by O.L.S. Fitzgerald. This line was then continued on another 9 mile chord of the same parallel of latitude to the Ground Hog River, a distance of 2 M. 62.69 chains where a wooden post was planted at high water mark and the above chainage inscribed thereon. Two 1 1/4 in. iron posts were left beside said wooden post and Mr. Speight notified by letter concerning same.

Returning to the starting point, a line was run west on a 9 mile chord of a parallel of latitude a distance of 8 M. 77.95 chains to its intersection with O.L.S. Speight's meridian of 1909 hitting said line 0.87 chains north of the post as shown on copy of notes of said line furnished by your Department, but 0.02 chains south of a 2 in. hub planted in sink hole marking the intersection of a surveyed line running due west and on which was planted 0.54 chains west of said intersection and on the westerly bank of said sink hole a 6 in. spruce post

marked on east side 54 and tied in two by two bearing trees, namely, 10 in. spruce N. 15 degrees west—0.17 chains and 5 in. Balsam S. 45 degrees west—0.076 chains.

The hour being late and the distance to camp long and never doubting at the time but that the latter post was due west of the 9 mile point, the markings on the other post were neglected. So far we have been unable to get any light on the matter.

The meridian was then produced another 9 miles and from this point a second east line run 9 miles with posts planted as per instructions, and a line west to said O.L.S. Speight's line, a distance of 8 miles 75.73 chains intersecting said line 0.49 chains south of XVIII mile post.

The meridian was then produced 9 miles further and a third line run east and west, the latter at VIII M. 73.73 chains intersecting the production of said O.L.S. Speight's meridian 1.33 chains north of the XXVII mile post.

Provisions by this time were running low, but we were able to run six more miles of meridian before being forced to abandon the work within sight of the goal. Had we been able to bring all the canoes along we would have completed the contract but the one small canoe was capable of carrying only our assistant and two canoemen to Fauquier on the T. C. Ry. over a route, the nature of which we did not know, but which if navigable would prove the most convenient route by which to return to complete same or continue the outline work farther north another year. With this idea in mind we had our assistant make a compass survey of the route and have drafted same as per his notes on our returns to your Department.

#### INSTRUMENT WORK.

A Light Mountain Gurley instrument was used on the work, and from two to four observations taken every night that polaris was visible. These observations were facilitated by the use of curves previously plotted in our office for the latitude and longitude of the work, a copy of which we attach, and our watch set for solar time and corrected every few days.

We found observations solved by the use of this curve to check to the half minute.

#### CHAINAGE.

A chain of 400 links was used and the chainers cautioned not to break chain but read the inclination with an Abney hand level and reduce to horizontal distance, curves being also used for this purpose, a copy of which we attach. The chainers were duly sworn in on the ground at the starting point, the chain tested and re-checked twice during the survey, and we believe they strived hard to render correct measurements.

Elevations of all hills were solved from the inclination angles taken while chaining.

#### POSTS AND BEARING TREES.

The most durable wood obtainable was selected and often carried many chains and marked by a scribe, while the iron posts were marked with a cold chisel. The largest trees were not selected for bearing trees but smaller and more healthy ones which would not likely for some time fall a prey to the axe of the lumberman, and these trees were chosen as far as possible in such a



position that lines drawn from them to the post, formed an angle of approximately 90 degrees or less, thereby making it the more easy at a future date to relocate the position of the post, should such be lost.

Astronomic bearings of these trees were taken by the use of a wooden disk, so constructed that it rested firmly on the top of the post planted, in whatever position set, and the face of this circular disk was carved into ridges and grooves radiating from the centre and along which the chainman sighted after having set the cardinal points to correspond with the direction of the line being posted.

#### BLAZING OF LINES.

As five axemen in all were used on line the picket man was held responsible for the blazing and very satisfactorily accomplished same almost unaided.

#### TIMBER.

A great portion of the land lying east of the meridian has been burned over some twenty or thirty years ago and is being rapidly reforested with birch, poplar, spruce and tamarac.

In this section on the first line east and on the fifth mile a narrow but good belt of jack pine has escaped and apparently runs in a northerly direction while scattered trees occur a few miles east on same line.

Very narrow ridges crossing the second line running east indicate what may be the northern boundary of a fair belt of tie timber, as jack pine suitable for tie timber also is present between the tenth and fifteenth mile posts on the meridian.

The forest bordering the third line running east and as far north as the Wokomeesee River, for the most part is second growth as far as we could observe from the tops of hills and trees.

West of the meridian the timber is very large and dense in many places, particularly in the Township of Wadsworth where spruce, balsam, balm of Gilead, poplar, birch and cedar attain a large size being sound as well, and some white pine and much scattered jack pine also is present although the white pine is not sound.

The only clearly defined spruce forest present within the limits of our survey is located along the western side of the Townships of Wadsworth and Lisgar, apparently widening out farther north and following the western bank of the Wokomeesee River. Much of this timber is suitable for pulp and the balance will soon be large enough.

#### WATER COURSES.

Due to the drought, navigable routes, if they exist in average years, were limited in our case to the Osishana Creek and Paypeeshekameka River as far west as the meridian, also the Wokomeesee River for some distance south into Lisgar Township, but the Koamakashkak Creek and Otapingshewee River might be improved for driving purposes.

Many of the lakes and creeks within the township lines were obtained from sketches by trappers familiar with the country and although vouched for by them are not considered authentic by us, but have been shown with a view to giving all the information acquired during the progress of the survey.

## ROCK FORMATION.

The country rock met with was for the most part granite with a high percentage of mica present in places, the only other formation met with being two outcroppings of schist, one in the third line east on the second mile and the other north of the XXIX mile post on the meridian.

## AGRICULTURE.

Most of the arable land is somewhat sandy and in places is suited for farming, but on the whole we think it better left unoccupied until present merchantable timber has been removed.

## ANIMAL LIFE.

Moose abound, indications of a few red deer were seen, wolves and bear are numerous, while the better class of fur bearing animals appear plentiful.

Brook trout were caught in the Koamakashekak Creek and the Paypeeshekameka River with hook and line, and pike and pickerel in several lakes with the trawl, but further than this we cannot say with what varieties the lakes and streams are stocked.

## FLOWERS AND SHRUBS.

None other than the varieties commonly met with in the great clay belt were observed along the lines surveyed by us.

## WATER POWERS.

We did not have occasion to pass by any waterfalls but know of the existence of four in the Township of Stanley on the Pishkanogama River, with an average head each of possibly 15 or 20 feet, three being within sight of each other.

In conclusion, we beg to thank you for the work allotted to us and assure you that every effort was made to accomplish the character of work required by your Department, and at the same time make a few sorely needed dollars to help tide us over another year.

We sincerely trust that the accompanying plan and field notes together with the timber plan will meet with your approval, all of which is respectfully submitted.

We have the honour to be, Sir,

Your obedient servants,

(Sgd.) SUTCLIFFE & NEELANDS,  
Ontario Land Surveyors.

*The Honourable, the Minister of Lands, Forests and Mines,  
Toronto, Ontario.*

*Appendix No. 31.*SURVEY OF THE OUTLINES OF THE PIC RIVER PULPWOOD AND TIMBER LIMIT,  
DISTRICT OF THUNDER BAY.

NIPIGON, ONT., August 2nd, 1919.

SIR,—I beg to submit the following report on the survey of the outlines of the Pic River Pulp and Timber Limit, surveyed by me under instructions from the Department of Lands, Forests and Mines, dated Toronto, April 15th, 1919.

Pursuant to instructions, I commenced my survey at the point in which the centre line of the main track of the Canadian Pacific Railway is intersected by the line between townships numbers 73 and 74, as located on the ground by E. Stewart, O.L.S., in his survey of township outlines along the C.P.R. in 1894. From this said point I ran north astronomically a distance of 32 miles and 25 links to the north-east angle of the pulp limit, this said line forming the easterly boundary thereof. I planted the 4 Mile Post as directed in my instructions and at the end of each mile thereafter I planted a wooden post. These posts were made of the most durable wood obtainable. In a very few instances it was found absolutely necessary to use balsam posts but the great majority of the posts, as shown on my field notes, are either of spruce or of Banksian pine. Wherever possible, I placed a cairn of stones about the post. I planted iron posts beside the wooden posts at the end of every third mile, as instructed and marked the iron posts with a cold chisel. The iron and wooden posts are marked with Roman numerals, marked with the number of the mile from the initial point of each line. I marked two bearing trees, wherever possible, for each mile post. These are shown on my field notes. In some instances, it was impossible to get any bearing trees; these instances are also noted in field notes. Unless otherwise specified in my field notes, all wooden posts planted were dressed six inches square. All posts were firmly planted in the ground, and after being set, stand at least three feet above the ground.

From the north-east angle of the Pulp Limit, I ran west astronomically on six mile chords of the parallel of latitude, a distance of 46 miles to the north-west angle of the limit, and from that point, I ran south astronomically to the shore line of Lake Superior. Where the end of a mile came in a lake, as it did in several instances, I planted a post on the nearest shore and marked it to show its distance from the true position.

Where the distance across a lake or river could not be obtained with a steel tape in the usual way, I obtained the width by triangulation. The base of the triangles employed in this work was, in all but two or three instances, made of sufficient length to give an angle opposite the base of not less than ten degrees. Frequent astronomical observations for azimuth were taken and the notes of these I am enclosing with my field notes. My lines of survey were well cut out and particular attention was paid to the blazing thereof. On the north boundary there is a burnt area of eleven miles in extent. There was no timber on this area so no blazing at all could be done. However, I had my picket man plant pickets with a mound of stone about them whenever he could do so, to render it possible to find and follow this line. Wherever there was green timber, the line was well blazed in the prescribed manner.

## SOIL.

The easterly boundary of the limit, ran, for the better part of its length through rocky country, this being granite. There were some sandy areas, as shown on the field notes, but for the most part, this line ran through a rough, rolling, rocky country. This kept up along the northerly boundary until I had crossed the Pic River. From this point on, along the northerly boundary, the soil was clay, where it was not rocky. The westerly boundary was also rocky, very rough, with, however, sandy soil between the areas of rocky land. In general, the entire outline of this limit may be said to be very rough and rocky, especially along the northerly boundary where sheer cliffs of from 100 to 400 feet are met with. The areas of clay and sandy soil met with were so small in extent as to be of no interest from an agricultural standpoint.

## TIMBER.

As shown on the field notes for the several lines, the prevailing timber is spruce and balsam, birch and poplar. There was some Banksian pine met with but not in sufficient quantities or of sufficient size to be of commercial value. In fact, no tie timber was encountered at all on this survey except through the small area that had previously been cut over on the westerly boundary. Although the survey lines ran through spruce and balsam, in some cases of considerable size, there were no areas encountered that would be of interest commercially. It was a constant source of wonder to me as to where the areas of pulpwood did lie, I having heard that this was a wonderful limit for pulpwood. Undoubtedly, the areas referred to must lie well within the limit. There was no white or red pine, and no cedar met with. As stated above, there is an eleven-mile burn on the north boundary, twice burnt over, extending four miles to the south and two miles to the north of the northerly limit.

## MINERALS.

The formation for the greater part of the area, as covered by me, was of granite. There were small areas, especially on the northerly boundary which would warrant the attention of prospectors. My men brought back samples of free gold and some samples of copper. If it is the wish of the Department, I will be glad to forward these to Toronto. I might add that iron pyrites were found to some extent along the westerly boundary.

## GAME.

The country abounds in wild game. Moose and cariboo were found in great abundance. The smaller lakes along the northerly boundary being great natural feeding places for them. Partridges were found in large numbers. As shown on the notes, there are many small beaver meadows. Beaver are very plentiful in this area. The fishing is excellent, speckled trout being in abundance in all of the streams met with. The lakes are full of pike and pickerel. On two of the larger lakes, lake trout seemed very plentiful.

## LAKES AND STREAMS.

A glance at the plan will show better than a description can, the lakes and rivers met with on this survey. The principal rivers being the Pic, Little Pic



and Steel. The larger lakes being the Whitefish, Trout and Owl. There are innumerable small streams and small lakes in this large area. I have endeavoured to show these and the connections between them on my plan. It must be understood, however, that this is a most incomplete plan, as far as water routes are concerned. There were no places where I considered that a reservation should be made to the Crown of water powers. There may be such areas within the limit, but at or near the boundaries as run by me, there were no areas of sufficient importance to warrant any special attention.

#### CONCLUSION.

I feel, sir, that this report is not complete in detail, but the plan and field notes will show the extent of the timber areas, will show the rivers and lakes, canoe routes, burnt and cut-over areas, better than they can be covered in any report. If there are any inquiries that you, sir, may wish to make, or that the Department wishes to make, I will be glad to go into further detail as well as I can. As a timber report, this report will be of no value, for we encountered no timber on the survey—that is, no timber of commercial value and in sufficient quantity to warrant timbering operations to drive it to the lake.

I trust, sir, that my plan and field notes will be found to be correct and in good order, and that the lines of survey as run on the ground, may be found by your Inspector to be well cut out and blazed, the posts well marked and planted. All possible care was taken to follow the instructions, both written and printed in this and other respects.

I have the honour to be, Sir

Your obedient servant,

(Sgd.) M. E. CROUCH,  
Ontario Land Surveyor.

*The Honorable, the Minister of Lands, Forests and Mines,  
Toronto, Ontario.*

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#### Appendix No. 32.

#### SURVEY OF THE TOWNSHIP OF CUMMING, DISTRICT OF ALGOMA.

SAULT STE. MARIE, January 16th, 1919.

SIR,—We have the honour to report that under instructions dated the 26th of June, 1918, we have subdivided the Township of Cumming into farm lots of approximately 100 acres each. We commenced the survey by running south astronomically the sideline between Lots 6 and 7 from the north boundary of the township. This line is a continuation of the corresponding sideline in the Township of Idington subdivided by O.L.S. Dobie. We cut this line for approximately 9 miles taking a number of observations. We next ran the south boundary of the township running due west from a post marked 9 M. planted by O.L.S. Niven in 1906 to the intersection with another meridian also run by O.L.S. Niven in 1906.

These meridian lines are approximately 9 miles apart. We continued the survey throughout the township observing Polaris frequently for meridian and correcting any small errors found in the direction of the lines. A traverse was made of all lakes found in the township.

There are no rivers of importance in the township. Lost River is not navigable and cannot be used even for canoe travel as it is filled with log jams and contains many beaver dams. During the summer season parts of this river are practically dry.

The whole of the township is quite level, there are a few clay ridges which are unimportant. Rock outcrops only in three or four places in the whole township. The formation consists of Keewatin greenstone and schist. Near the south boundary of the township there are strong indications of magnetic deposits. A few mining claims were staked on these indications in 1913 but were apparently abandoned as there are no signs of work having been done.

The soil is principally clay or clay loam. This is covered in the green bush with about twelve inches of moss and black muck but in the brule the clay is lying exposed. We would consider fully seventy-five per cent. of this township fit for agricultural purposes. Portions of the brule are sparsely timbered and could be cleared with very little work.

The timber in the township is nearly all spruce up to about 8 in. in diameter. On the ridges and higher ground considerable poplar and birch is found. There are also quantities of cedar in the swamps near the west boundary of the township. The brule is generally covered with small spruce and alders and is about twenty years of age. Evidently this country was fire swept about eighty years ago as no standing timber exists older than this.

No fish of any importance were noticed in the township. The lakes are all marshy and shallow and only a few pike exist in these. Moose and beaver are quite plentiful. There is no settlement of any description within the limits of the township.

The average magnetic variation we found to be 7 deg. west of north.

We have the honour to be, Sir,

Your obedient servants,

(Sgd.) LANG, ROSS & RAMSEY,  
Ontario Land Surveyors.

*The Honourable, the Minister of Lands, Forests and Mines,  
Toronto, Ontario.*

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### *Appendix No. 33.*

TRAVERSE SURVEY OF THE OPAZATIKA RIVER AND LAKES, PISHKANOGAMA LAKE, GROUND HOG AND HORWOOD LAKE, AND SAHKATAWICHTAH RIVER AND LAKE.

COBALT, November 12th, 1919.

SIR,—In obedience to your instructions, dated May 2nd, 1919, to traverse certain lakes and rivers in the Districts of Sudbury and Algoma, I have surveyed as much of my contract as was possible and beg to report as follows:—

## ROUTINE OF WORK.

On May 16th, I left Cobalt with my party. We commenced the survey of Opazatika River at the south boundary of McCrear Township on May 19th, and worked upstream in a southerly direction through Opazatika River, Rufus, Penelton and Opazatika Lakes, finishing this portion of the work on July 4th. From Opazatika Lake we came down stream to the National Transcontinental Railway and boarded train to Foleyet on Canadian Northern Ontario Railway.

The survey of Pishkanogama Lake was commenced at the south boundary of Foleyet Township on July 14th, and finished on August 5th. Camp was moved to Ground Hog Lake.

The survey of Ground Hog Lake was commenced at the south boundary of the north half of Keith Township on August 9th, continued through Ground Hog River to Horwood Lake. Through Horwood Lake and the north-east arm thereof and tied on to the north boundary of Dale Township. This work was finished on September 12th and camp moved south to Sahkatawichtah River.

The survey of Sahkatawichtah River was commenced at the south boundary of Dale Township on September 16th and continued southerly to Sahkatawichtah Lake. The survey of this lake was completed with the exception of a small portion at the north-west end. This is shown dotted on the plan.

For some time the weather had been stormy and wet, making it difficult to get readings and dangerous for men in canoes owing to the size of the lake. On the morning of September 30th I moved camp to Ground Hog. On October 1st, I paid off my party with the exception of C. E. Code, O.L.S., who has assisted me in preparing plans of the work.

From considerable traverse work I have done in winter I think that about as good progress can be made then as in summer. As blazed trees are used to tie in traverse points, the difficulty of planting posts in winter is not encountered. The main traverse being chained on the ice, is very accurate. Even with the snow, the shore line can be determined very accurately. If you so desire, I shall be glad to continue the survey as soon as the ice becomes good.

The following is the mileage of traverse:—

<i>Opazatika—</i>		<i>Sahkatawichtah River....</i>		6.5	
River .....	25.5	<i>Sahkatawichtah Lake ...</i>	20.0		
Lakes .....	83.5	<i>Sahkatawichtah Islands...</i>	1.5		
Islands .....	16.5				28.0
	<hr/>				
	125.5				
<i>Ground Hog—</i>		<i>Pishkanogama—</i>			
Horwood Lake .....	45.8	Shore Line Blue .....	61.7		
Ground Hog River.....	4.5	Shore Line Brown .....	69.8		
Ground Hog Lake .....	10.5	Islands .....	4.7		
Islands G. H. L. ....	2.0				136.2
Islands Horwood Lake...	3.0				
	<hr/>				
	65.8	Total .....	355.5		

This total is only approximate.

## METHOD OF SURVEY.

(a) *Instruments used.*

Except in the survey of Pishkanogama Lake, where most of distances between stations were chained on the sand, the traverse was made by stadia readings for distance. Azimuth angles were carried through with a transit.

The stadia rods used read direct to tenths of links. The accuracy of readings was checked from time to time by readings on measured lines and also on the sides of triangles, calculated from chained base measurements. They were found to be very accurate. Results are shown in the field notes.

### *Field Notes.*

(b) One form of field notes was kept throughout the course of the work. The notes were transcribed in ink and carefully checked. They show—station, azimuth, distance, angle right, bearing, and under remarks, the point on which the reading was taken.

(c) Observations.—Observations were taken frequently on Polaris and the sun for azimuth. The calculations are shown in the field notes.

(d) Posts and blazed trees.—On rivers and around the shores of lakes, trees were blazed at intervals of about one mile and were marked “1 M,” “2 M,” “3 M,” etc. Records of these are shown on the plans and in the field notes.

On islands, stump posts were made. A good sound tree was felled and the stump squared and marked with a letter “A, B, C,” etc. Except in a few cases where the islands were very small, when a tree was blazed. The bearings shown to posts and trees are astronomical.

(e) Survey lines, township boundaries.—In all cases where survey lines were found; they were tied in and are shown on the plans. Posts were planted one chain from the shore on each side of the river or lake, where this had not been done in the original survey.

At the south end of Pishkanogama Lake, on the west side, we found what appears to be the production across the lake of O.L.S. Sinclair's line, run in 1867. We tried to find more blazed trees by turning an azimuth of 90 degrees, but the others seemed to have been burned as it is a very old brule at this point. The tree we found is a fourteen-inch cedar, blazed on three sides and marked “IXMIX.” The wood grown over the blazes seems to be about 32 years old and the cedar has been dead probably 20 years.

### DESCRIPTIONS OF LAKES AND RIVERS.

#### (a) *Opazatika River and Lakes.*

*Shores.*—Opazatika River has an average width of about two chains. The shores are clay, except in a few places where rock outcrops. The land back from the banks is nearly all an old brule grown up with poplar of from three to four inches in diameter down to mere brush. The soil is a good clay loam very suitable for agriculture, and very easily cleared at present while this growth is small.

The shores of Rufus, Penelton and Opazatika Lakes are rocky and, as the brule extends here also, there is very little valuable timber.

*Water Powers.*—There is only one falls of real value from a power viewpoint. This is on the Opazatika River at the eleventh mile post of the traverse, south of McCrea Township.

Owing to wind I was unable to get the flow measurement. The head is 22.7 feet.

One hundred and sixty acres should be quite sufficient land for development purposes. The two snapshots shown below are of this falls.



*Islands.*—There are thirty-six islands in Opazatika Lake. The largest one contains 776.8 acres. The next largest 24 acres. The majority of the remainder are small. They are almost all very rocky and timbered with jack pine, spruce, birch, poplar and balsam. A3 which is the largest is nearly all brule.

(b) *Pishkanogama Lake.*

*Shores.*—The shores at the north end of Pishkanogama Lake are of sand. Sandhills rising from the original shore line are timbered with jack pine, some spruce and balsam, birch and poplar. At the narrows of the lake rock outcrops. From this point to the south end of the lake, the shores are rocky.

A considerable amount of the timber has been destroyed by fire, particularly at the south end of the lake and along the west shore from the narrows south. There is, however, considerable good timber on the west side of the lake. Jack pine and spruce averaging from 10 to 12 inches in diameter, also balsam, birch and poplar.

Towards the south end of the lake the ground rises very quickly from the shore line, and from portions I was over, I would say was not favourable for agriculture.

The original water level of the lake has been lowered at the north end 19.4 feet. This leaves a series of small mud rapids at the narrows. The water immediately above the narrows is very shallow, making progress in canoes difficult for a distance of about one mile. The difference in elevation between the original and present water level above the rapids at the narrows is 10.8 feet. At the south end of the lake the water has been lowered 11.7 feet. The two snapshots shown below were taken from the north end of the lake looking south.

At the north end of the lake, the bottom exposed is sand. From the narrows south, it is a mixture of sand and clay.

On the plan of survey I have shown the land between the original and present water level coloured a light brown.

*Islands.*—There are fifteen islands in Pishkanogama Lake. The largest, Island F, containing 34.6 acres. The next largest, Island C, 6.8 acres. The remainder are very small. With the water at its present elevation, most of the islands are really mainland. The acreage shown on the plan is for that area which is within the original shore line. All the islands are well timbered, and under natural conditions must be very pretty. The soil is sandy with rock outcroppings.

(c) *Ground Hog Lake and River.*

*Shores.*—The shores of Ground Hog Lake are fairly high. The ground rises sharply from the shore line. The land is rocky covered in places with a heavy overburden of clay and gravel.

The north, west and south shores are fairly well timbered, but the east shore is most brule.

*Islands.*—There are five islands in Ground Hog Lake. Island A, containing 28.8 acres. The next largest, Island C, containing 5.2 acres. The remainder are very small. With the exception of A, which is sand and gravel, they are rocky. All are well timbered.

The river south from Ground Hog Lake has an average width of five chains. The current is slow. At station 16, 17 and 18, there are rapids with a total fall of 4.6 feet. The banks of the river are mostly flat. Considerable ash is to be found along them, some of it running as large as ten inches in diameter.

(d) *Horwood Lake.*

*Shores.*—The shores of Horwood Lake are very rocky. The north-east arm shores being particularly high and rough.

*Timber.*—The west side and the north-east end of the lake proper, are well timbered with jack pine, spruce, balsam, birch and poplar, while the remainder is old brule with patches of second growth jack pine, spruce, poplar and birch.

The north-east arm from the narrows at its outlet up to about half way up the arm, say to station 64, is old brule with patches of jack and red pine. From station 64 to the north end is good timber, jack pine, spruce, balsam, birch and poplar with good cedar along the shores.

*Islands.*—The islands in Horwood Lake are all rocky and with the exception of the large island at the north end of the lake proper, which is brule, are all well timbered.

(e) *Sahkatawichtah River and Lake.*

*Shores.*—The shores of Sahkatawichtah River and Lake are fairly rocky. The ground back from the shore is high and rough.

*Timber.*—The shores along the river are mostly old brule.

The north-west side and the north-east end of the lake are practically all brule, while the south-east shore is well timbered with spruce, jack-pine and balsam.

*Islands.*—The islands are all rocky and fairly well timbered. They are all small.

Accompanying this report are:—

*Plans.*

Opazatika River and Lakes.

Pishkanogama Lake.

Ground Hog and Horwood Lakes.

Sahkatawichtah River and Lake.

*Field Notes.*

Three field books containing notes of all the above plans.

The above is respectfully submitted.

I have the honour to be, Sir

Your obedient servant,

(Sgd.) T. G. CODE,

Ontario Land Surveyor.

*The Honourable, the Minister of Lands, Forests and Mines,  
Toronto, Ontario.*

*Appendix No. 34.*

## SURVEY OF TOWNSHIP OUTLINES IN THE DISTRICT OF SUDBURY.

ORILLIA, October 31st, 1919.

SIR,—Upon receipt of your instructions bearing date of the twenty-second day of April, 1919, for the survey of township outlines in the District of Sudbury, we proceeded to make such preparations as were necessary to carry out the work outlined therein.

The unsettled condition due to after-war unrest, effecting especially the labour market, and to a lesser extent the procuring of certain kinds of supplies and their transportation, consumed a good deal of time, and it was not until the 27th day of June following, that we were able to leave with our party for the site of the work, although we had men stationed at Agate for some time previously awaiting the arrival of supplies. All through the work this state of unrest was reflected in the working forces, and added not a little to the difficulties ordinarily encountered.

The Indians in the upper country also, admittedly the best men procurable for this class of work, experienced a heavy mortality during the past winter, through the outbreak of Spanish influenza, and many of those who were fortunate enough to recover, were in poor condition to withstand the hard work and exposure involved.

Heavy bush fires to the south and west lent an occasional smoke pall of some days' duration, at times thick enough to render sighting difficult; while from the latter part of August and through September, there was a period of almost constant rain.

Sending our main supplies to Agate to be transported up the Chapleau River, we left the Canadian National Railway at Missonga and proceeded to the southwest angle of the Township of Shenango, where the survey was commenced. Running the meridian from this point due south to its intersection with the base line run by O.L.S. Speight, we proceeded west, and in general followed the programme laid down in the instructions. Six inch square wooden posts were planted at every mile, or at the nearest shore where water interruptions occurred, with the addition of an iron post at three mile intervals, and marked with the mileage or the township names. Astronomical observations were taken wherever desirable, when weather conditions permitted, and a close alignment maintained. Base lines were run on the chord of the parallel. Details of all operations will be found in the plans and field notes returned herewith.

The country traversed, lying as it does along the southerly edge of the clay belt, possesses the characteristics of border topography, and marks the transition from the rougher rockbound hill country to the south, to the level expanses of the clay belt. The surface is one of short broken undulations, seldom interrupted by sharply rising hills, and such of these as do occur rarely exceed forty or fifty feet in altitude. Comparing this section with surrounding areas, we might say that to the south are storm tossed waves, here a rippled surface and to the north a placid calm.

Rock outcrops are not numerous, the country being well covered, and such exposures as do occur apparently belonging to the Laurentian formation.

Two main drainage channels traverse this area, flowing toward the north. Trout River crossed by the base line between Sherlock and Lincoln at VI 3-4 M.

and following closely the course of the meridian between Lincoln and Copperfield, is a leisurely stream affording an excellent canoe route, and imposes only one obstacle in its course through these townships, in the form of a fall of some fifteen feet, opposite the four mile post, where a portage of about five chains is required. From opposite  $V\frac{1}{2}$  to  $VIII\frac{1}{2}$  miles, this stream widens into a lake expansion, with well wooded shores and four islands of six to eighteen chains in length. From the last mentioned point the course of the river turns south-easterly.

Chapleau River, crossed by the base line between Bonar and Copperfield at mileage  $3\frac{1}{4}$  and by the meridian Sherlock-Bonar at VI M + 22.70 chains and entering Agate Lake in the Township of Kapuskasing; is of quite a different character; and is marked by many shallow rapids in its course through Bonar and Sherlock, rendering it a poor stream for travel by canoe. A fall of about fifteen feet occurs a short distance north of the south boundary of Bonar, and another about two and a half miles further south. The banks of this stream are usually low, and must occasion a good deal of flooding at spring levels. Its general width is from one hundred and fifty to two hundred feet, of comparatively shallow depth, and good current.

A creek or river enters the Chapleau about opposite IV M. on the Bonar-Sherlock meridian. This stream flows from a considerable lake, approaching the south boundary of Bonar at V. M. and in its westerly continuation crosses the meridian Bonar-Lloyd at II M + 67 chains. It is also shallow and tortuous, with many rapids, and difficult of navigation. Its general width is about one hundred feet.

The lake through which this latter river passes, is of peculiar bifurcated outline, about two and a half miles from north to south by an extreme width of a mile and a quarter. It possesses deep, clear water, high and beautifully wooded shores and sand beaches; a campers' playground were it for difficulty of access.

The only other considerable lakes noted were that at the intersection Shenango-Sherlock-Lemoine-Lincoln; and one whose easterly end is crossed by the meridian Lemoine-Lincoln between VII and VIII M. Both these lakes find an outlet to the east.

#### SOIL.

The soil throughout the area through which the outlines pass is of a sandy character, usually mixed with boulders or gravel, and cannot be classed as even fair agricultural land. In places, notably along the Sherlock-Bonar meridian, a very hard subsoil occurs, of a sand-clay mixture, at a depth of a foot, and effectually prevents trees from obtaining an adequate roothold.

#### TIMBER.

Extending from  $II\frac{1}{2}$  M. to  $VII\frac{1}{4}$  M. on base line Sherlock-Lincoln, there is an area of heavy timber, chiefly of jack pine of a diameter from six to twenty inches. This is in thick stand, tall and good, and would afford excellent opportunity for log and tie making. Many of the trees of smaller size would cut out five to six railway ties. Large single trees of spruce, poplar and birch also occur in this area.

Considerable jack pine of merchantable size also grows along the south boundary of Bonar west of the Chapleau River from IV M. westerly and extends northerly



along the west boundary of that township, where, however, it takes on a more limby character, than that further east.

Red pine up to twenty inches, and to the extent of perhaps a thousand trees, was found growing on the peninsula separating the two arms of the lake opposite V M. south boundary of Bonar. Exclusive of scattered trees of rare occurrence, this was the only block of white or red pine observed, save for a clump of mature white pine apparently of small extent, on the hill at IV M. + 50 chains on the meridian Lemoine-Lincoln.

Outside of the two areas above described, the central southerly part of Sherlock-Lincoln, and southwesterly part of Bonar, the forest throughout this region, in so far as could be observed from outlines run, does not appear to offer great encouragement for timbering operations. Everywhere large single trees are met with, especially of spruce which furnishes some fine examples of tree growth, and occasional large poplar and white birch. In some of the swamps, also, and along the river banks, cedar from fifteen to twenty-four inches in diameter is found growing. This is of fair length and sound, but no large area of this species was seen.

The general character of the growth, however, is immature and would afford but a small proportion of timber of logging size. This condition may be due to former fires, where sufficient time has not elapsed to give a mature growth, except for those trees which weathered the conflagration. In some localities it would appear, however, to be due to a hard impenetrable subsoil; where as soon as a tree attains a height of thirty to forty feet, it is in imminent danger of being uprooted by the wind. This latter condition is specially evident along the Sherlock-Bonar meridian. Indeed, through the whole area windfallen timber is much in evidence and constitutes a serious fire menace. Almost everywhere the ground is covered with a thick undergrowth; alder on the lower levels, moosewood and hazel on the higher lands.

To the southward and extending up to the lake expansion of the Trout River in the southwesterly part of Lincoln, which marks its northerly limit; the country has been effectually fire scorched, and is occupied by young growth of a few years. Crossing the south boundary of Bonar from V M. + 16 chains to 40 chains and extending northeasterly to the lake shore; there is also a small burnt area, but only in these two localities does the country show the effect of fires of the past thirty or forty years, being uniformly green.

In common with much of the country to the south, this area would probably find its most advantageous disposition by being included in forest reserve; and the greater part of it by being allowed a considerable time to mature its timber before logging operations are undertaken. This, of course, being contingent upon the feasibility of properly protecting it from fire.

We have the honour to be, Sir,

Your obedient servants,

(Sgd.). CAVANA & WATSON,  
Ontario Land Surveyors

*The Honourable, the Minister of Lands, Forests and Mines,  
Toronto, Ontario.*

*Appendix No. 35.*

## TRAVERSE SURVEY UP LAKES, RIVERS AND PORTAGES IN THE TIMAGAMI FOREST RESERVE, DISTRICTS OF SUDBURY AND NIPISSING.

PARRY SOUND, December 5th, 1919.

SIR,—I have the honour to submit the following report of the traverse survey up lakes, rivers and portages in the Timagami Forest Reserve, Districts of Sudbury and Nipissing under instructions bearing date April 30th, 1919.

I left Parry Sound with cook and one man May 15th, and proceeded by rail to Timagami Station, reaching there in the afternoon of May 16th, where I was met by assistant Coltham.

Owing to the high wind on Timagami Lake, I was compelled to secure the services of a gasoline launch to transport my men and supplies to Bear Island which I reached late Tuesday evening, thus compelling me to put up my men and myself at the hotel for night. Owing to rain on May 17th, we were compelled to seek the shelter of the hotel until evening, when we were able to pitch our tents where we remained until the following Monday morning. At Bear Island we secured the services of two Indians.

May 18th we proceeded to Gull Lake which we reached the same evening in time to pitch our tents. After testing our micrometer by chained distances, we commenced the traverse of Gull Lake the following Tuesday. This is a fair size lake with numerous islands, covered with red and white pine. The shores of Gull Lake are high and very rocky and in some places are steep.

After completing this lake we traversed Skunk and Allan Lake, and also made a chained traverse of the portages between these lakes.

On June the 3rd, we moved camp to Turtle Lake, where on the following morning we obtained a Polaris observation. The shores of this lake are high and rocky.

From here we moved camp back to Gull Lake, where we traversed the two small lakes Long and Cummings.

June 16th we moved from Gull to Devil's Lake, which we commenced to traverse on the following day. This lake appears very deep with high rocky shores. There are the remains of a mining shack on the east shore of this lake.

The next lake to be traversed was Emerald, a beautiful lake with numerous sand beaches and projecting points. The remains of a mining camp with numerous buildings are found along the west shore.

On June 27th, we proceeded to make a traverse of the small lakes, Aleck, Woods, Moses and Kibble. These lakes are situated among high hills with high rocky shores, therefore, joined by portages.

From here we moved camp to Obabika Lake. This is the largest lake that we encountered on our work and was visited by a large number of tourists during the summer. The shores are generally high and rocky with numerous sand beaches and a few marshy bays. Along the banks are red and white pine, cedar and birch. On completing this lake, and smaller ones adjacent thereto, we made a traverse of the Obabika River as far as the storage dam.

Our next lake was Wakimika which was reached by a river of the same name. The south end of this lake is marshy with high rocky shores elsewhere.

From here we proceeded across two portages to Diamond Lake. The shores of this lake are high and rocky with high hills surrounding them.

Completing this lake we moved across a one and three-quarter mile portage to Willow Island Lake. This is a long narrow lake with a few scattered islands. The shores are generally rocky with numerous sand beaches. This lake is connected by a narrow strait of water with Lake Sucker Gut, the survey of which was completed on August 27th. From here we moved camp across many lakes and portages to the Obabika River, on arrival there we traversed river to the junction with the Sturgeon. The Sturgeon River averages between one and one-half to two chains wide with high clay banks ranging between six feet and fourteen feet high, very few outcrops of rock are found. The land is a sandy loam and appears well adapted for agricultural purposes. Considerable horse-power could be developed on the Upper and Lower Goose Falls met with on this river.

Our next work was the traverse of Grassy Lake which was reached by canoe and portage. The west end of this lake is marshy with sand beaches on the east side. After completing the traverse of portage route to Devil's Lake, we connected up our survey with previous work.

Along the shores of the lakes and rivers trees were blazed and marked with a designating number as 1, 2, 3, etc., where shown.

On each island of any size a tree was blazed and marked with the numbers "A," "B," "C," etc., as shown in plans.

#### FISH AND GAME.

Fish of many kinds, especially trout and black bass were found in the different waters throughout the work.

Moose and red deer were very plentiful, with many signs of beaver workings.

Accompanying this report are my diary; plans of lakes on linen, scale twenty chains to an inch; field notes of part of line between Townships of MacBeth and Clement; and my account in triplicate, which I trust you will find in order.

I have the honour to be, Sir,

Your obedient servant,

(Sgd.) DAVID BEATTY,  
Ontario Land Surveyor.

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#### *Appendix No. 36.*

#### SETTLER'S LOAN COMMISSIONER.

TORONTO, October 31st, 1919.

*To the Honourable the Minister of Lands, Forests and Mines, Toronto, Ontario.*

SIR,—I beg to herewith submit a report of the operations conducted by this Department under the Northern & Northwestern Ontario Development Act, Amending Acts 1916 and 1918.

Up to October 31st, 1919, a total of 2,001 applications for loans were received, asking for an amount of \$776,790.00, an average of \$382.39 per application. With

every desire to co-operate and assist deserving settlers, careful consideration was given to each individual request, and loans advanced, on the basis of security offered in the way of improved land, where it was clearly shown the money could be used to good advantage in the improvement of settlement conditions.

A total of 1,414 loans were made to settlers amounting to \$442,256.00, an average of \$312.76, and in addition a loan of \$12,000.00 was advanced to the Sudbury Co-operative Creamery Co., Ltd., the loans being distributed over the various districts as follows:

District.	No. of Loans.	Amount.
Algoma .....	17	\$4,525 00
Kenora .....	115	33,545 00
Nipissing .....	64	22,750 00
Rainy River .....	121	38,300 00
Sudbury .....	29	21,725 00
Temiskaming .....	635	197,265 00
Thunder Bay .....	434	136,146 00
Totals .....	1,415	\$454,256 00

Reports received and observations made would indicate that the loans granted have been of great benefit to the settler struggling to get sufficient clearing to enable him to stay at home and work the land, and to get some live stock with which to carry on.

Repayment of loans has been very satisfactory as is evidenced by the fact that almost 90 per cent. of the interest payments are up-to-date and payments of principal have exceeded the amount due, on account of some loans being paid off in advance.

In conclusion, would direct your attention to the following memorandum giving further details of operations carried on, and would say that appreciation of the small loans granted under easy conditions of repayment has often been expressed by the individual settlers concerned.

#### MEMORANDUM OF SETTLERS' LOANS TO OCTOBER 31st, 1919.

##### APPLICATIONS.

Total number of applications received .....	2,001
Total amount applied for .....	\$776,790 00
Average per application .....	382 39
Amount applied for under approved applications .....	564,640 00

##### LOANS.

Number of loans issued .....	1,415
Equal to 70% of applications.	
Amount granted .....	\$454,256 00
Equal to 58% of total amount applied for and	
Equal to 80% of total amount applied for under approved applications.	
Average loan .....	\$312 76
Total acreage covered by liens .....	217,040
Acreage improved land .....	29,729
Equal to 13.6% of total acreage.	
Average loan per acre on total acreage .....	\$2 03
Average loan per acre on acreage improved land .....	14 87

NOTE.—Figures, except averages, include application for, and loan of \$12,000 to Sudbury Co-operative Creamery Co., Ltd.



## REPAYMENTS.

Accrued interest due .....	\$48,402 90
Accrued interest received .....	42,974 63 or 88.78%
Payments on principal due .....	70,469 71
Payments on principal received .....	70,500 25 or over 100%
Total payments due .....	118,872 61
Total payments received .....	113,474 88 or 95.45%

## UNPAID PRINCIPAL AND ACCRUED INTEREST OUTSTANDING.

District.	Amount.
Algoma .....	\$4,026 74
Kenora .....	28,492 00
Nipissing .....	19,042 50
Rainy River .....	33,184 15
Sudbury .....	20,544 55
Timiskaming .....	162,168 78
Thunder Bay .....	121,725 30
Total .....	\$389,184 02

Yours very truly,

F. DANE,

*Settlers' Loan Commissioner.**Appendix No. 37.*

## ALGONQUIN PROVINCIAL PARK.

## SUPERINTENDENT'S REPORT.

ALGONQUIN PARK, October 31st, 1919.

HONOURABLE SIR,—I beg to hand you my twenty-first annual report on the Algonquin Provincial Park for the fiscal year ending October 31st, 1919.

Situated as Algonquin Park is, only 169 miles from the capital of Canada, 206 miles from Toronto, within easy journey of the principal cities of the United States and crossed by two important railways, the Grand Trunk and Canadian National, it has become a very popular health and pleasure resort. The angler, too, from all over the continent has found in the hundreds of lakes and the numerous rivers which take their rise in the Park, sport that cannot be surpassed in any part of America. Salmon trout are found in all our lakes, and speckled trout in most of them and all our streams. During the past season some very fine specimens were taken, the largest being a salmon trout weighing about 26 lbs. The small-mouthed bass was introduced here a number of years ago and has proven a great success. It has not only furnished splendid sport within the park, but has stocked the waters for a distance of a hundred miles tributary to the Madawaska river. Bass are not native to these waters, but thrive wonderfully where introduced.

The Park covers an area of some 2,741 square miles or 1,754,240 acres, in the district of Nipissing. It is a net-work of lakes and rivers, five important rivers taking their rise here. It is densely wooded with pine, maple, birch, beech, hemlock, spruce, etc.

That the object in setting aside this territory as a game preserve and breeding ground for wild life and a health and pleasure resort for the people of the

Province has been attained, is beyond dispute. Thousands of visitors annually enjoy the attractions of this health-giving region.

There are five hotels, all of which have been filled during the past season to their utmost capacity, and many visitors had to be refused for want of room. The largest hotel is the Highland Inn, situated on Cache Lake at Headquarters, which is owned and operated by the Grand Trunk Railway Company. Here one hundred guests can be accommodated and many more in tents. In connection with the Inn are two camps, Nominigan, situated on Smoke Lake some eight miles away, and Minising on Big Island Lake, ten miles distant. Each of these consists of one main lodge with large dining room and assembly hall, also a number of bedrooms, and several cottages that will each accommodate eight people, and supplied with bathrooms, open fire-places, etc. The sanitary arrangements are first class. Meals are served at the main lodge. Each of these camps can take care of some sixty people; they are reached by stage from Algonquin Park station, or by canoe from Cache Lake and Joe Lake respectively. Hotel Algonquin at Joe Lake, some seven miles west of headquarters, is owned and operated by J. E. Colson. Here some fifty people can be accommodated, and as many more in well furnished tents. Mowat Lodge, owned and operated by J. S. Fraser, at Canoe Lake, is really a part of the old Gilmour headquarters, and can accommodate some twenty-five people. In connection with each of these places is a good outfitting store and boat and canoe liveries. The lakes most frequented by the tourist are kept stocked annually; this year we put in here something like one hundred thousand salmon trout fry, and as many small-mouthed bass from the Government hatcheries, also a car of matured bass.

Game of all kinds is also very abundant. Otter, mink, marten and fisher are on the increase, while all our lakes, rivers and creeks are full of beaver, the annual increase of which runs into many thousands, the number taken out yearly being scarcely perceptible. I am glad to report that those sent to stock the waste lands of the townships of Lavant and Dalhousie have done well. James Park, of Maple Ridge Farm, writes they have had no trouble protecting them, as the residents take a lively interest in the matter, and there are already several healthy colonies. Those, too, sent to Rondeau Provincial Park, in Kent County, have taken hold and have not only adapted themselves to the altered conditions, but on my visit there this fall, a friend many miles from the Park told me he knew of a colony who had built a dam and were making a home not far from his place. The fishermen also tell me they are frequently seen swimming in the Eau.

It is certain with the war over there will be a big demand for live beaver for stocking purposes. The Board of Game Commissioners for the Commonwealth of Pennsylvania have asked for one hundred for the game preserves of that State. Some of these have been sent and they arrived in first-class condition, but owing to the late date at which the order was received, we will not be able to ship them all this fall.

Deer and moose are increasing all over the Park, especially the deer, and they afford a great deal of pleasure to the tourists as they pass through our lakes and streams, their tameness giving abundant evidence that they know they are protected. These animals overflow and stock the many hunting grounds surrounding the Park, thus keeping up the supply and thereby adding to the revenue of the Province in the hunting licenses sold.

Wolves, I regret to say, are still very much in evidence and very bold, notwithstanding the large number killed each winter by our rangers. Of course the abundance of game in the Park is responsible for this. The wolf soon learns where food is most easily obtained. The men get a bounty of \$20.00 for each wolf killed, the skins going to the Government and being worth as much or more than the bounty paid.

We took out the usual amount of fur this year, which was sold by tender at the Parliament Buildings, bringing the substantial sum of \$11,781.44. The fur is taken out by our regular rangers, the only extra cost being for traps. Fishing licenses were issued to the amount of \$1,612.00, residents paying \$3.00 and non-residents \$5.00. We also collected \$30.00 for guide's licenses. This does not include moneys paid direct to the Department.

We have several large boys' school camps in the Park, where from thirty to fifty boys spend a healthful and in all ways a beneficial holiday. At Cache Lake we have a large girls' school camp under the able management of Miss F. L. Case, of Rochester, N.Y. Here sixty girls spend the summer holidays under careful teachers and are instructed in woodcraft, canoeing and swimming. The entire camp this year consisted of seventy-five people. There are also a number of cottages on this and Canoe Lake, held under a twenty-one year lease, paying under the old regulations \$7.50 per year, and under the new \$10.00. The school camps pay \$75.00 a year. The sum of \$592.00 was collected here this year for rents, the hotels and some others paying direct to the Department. During the summer and fall hundreds of anglers and canoeing parties are scattered all over the Park tenting and canoeing from lake to lake.

Our staff consists of thirty-five men and superintendent and one housekeeper at the rangers' quarters, whose husband takes care of the grounds, etc., at headquarters and helps the lineman keep the phone line in order. The duty of our men during the trapping season is to patrol the beats under their charge in order to prevent illegal trapping. In general, two rangers travel together, having a stated section to look after in which they keep the portages cut out and the shelter houses in order. These shelters are usually a day's journey apart, and the practice is for the ranger to spend several days at each looking over adjacent territory. We have built seven new shelters this year, one in each of the following sections, Eagle Lake, South River, Opeongo, one near the boundary at Aylwin Lake and three along the Canadian Northern Railway. All these are good substantial buildings. Several of the other shelters have been re-roofed. This work is done by the rangers during the summer months.

I am especially glad to report no damage from fire during the past year. Several fires were started, but the rangers got them out before they had time to do any damage. The tank car was not called out at all this season. The telephone line was a great assistance to us in getting to fires promptly.

A large quantity of wood for fuel was cut by the contractors and our staff during the past season as follows: By contractor C. McConkey, 622 cords, all of which is drawn out to the siding at Rainy Lake ready for shipment; by contractor Ivoll, 4,785 cords, all delivered at Potter Lake siding ready for shipment; by Randolph Macdonald Company, at Canoe Lake, 1,253 cords, drawn out to Canoe Lake siding and 409 cords left in the woods to be drawn out during the winter of 1920. Of the wood cut at this point, 15 cars have been shipped containing 239½ cords. At Source Lake siding (M.P. 306) the Macdonald Company has drawn out 6,016½ cords and left 3,272½ cords in the woods yet to be drawn.



Of this wood 72 cars have been shipped out, representing 1,165¾ cords, making a total cut by the Macdonald Company of 10,951 cords, of which there remain at the siding and in the woods 9,545½ cords. At headquarters we took out with our own men and some hired help 1,544 cords, 63 cars of which were shipped containing 1,003 cords, the balance, 541 cords, being drawn out to the sand pit siding ready for shipment. During the summer some of the staff were stationed at each of these points to guard against loss by fire. Water barrels were also placed along the line of railway; these our men kept full of water, our greatest danger being from passing trains. We did not, however, lose a single cord. I would strongly recommend that all this wood be disposed of during the coming winter. It is now in fine shape, but if left another season will deteriorate on account of dry rot, etc. That left in the woods should be drawn out on the first snow.

Considerable work was done by our men at headquarters. The water system has been extended so that we have a hydrant convenient to all the buildings. The two houses and all the outbuildings were painted, and the year's wood and ice cut and put in. The telephone line too was kept in order. We had very little poaching. Fines were imposed to the amount of \$150.00 after our men got back to their beats, but before that poachers took advantage of the fact that our men were away cutting wood.

I should like very much to see a good public hall erected here. It could be done at comparatively little cost, our men doing the work during the summer months. Such a place is badly needed for holding court, and during most of the year we could have divine service, had we a place suitable, as several ministers spend a great deal of time here. It would be convenient for public meetings and lectures, holding poll and many other ways. The Government furnish large dancing pavilions in much less important places. We do not want anything for that purpose, but we do need a good hall badly. I trust you will give this matter favourable consideration. The principal expense would be for material. We have hundreds of visitors here from all over the globe, and I am confident such a building would be much appreciated.

On the limits acquired by the Government from the Munn Lumber Company in the Park, there are many million feet of the choicest hardwood. This has now become valuable, and I would strongly recommend that some arrangement be made whereby the matured timber could be judiciously taken out and the Province get the benefit of the revenue. After timber matures there is no advantage in leaving it stand, as it soon becomes diseased and the younger timber becomes infected also. There is a very fine growth of young timber all through the Park. The timber to be taken out would consist of birch, maple, beech, ash, elm in small quantities, and hemlock, spruce and balsam. A lot of this timber would be convenient to the mills at Whitney and Belwood; the remainder would best be manufactured by a portable mill. Or the whole could be sold to one party and mill moved as the timber was cut out. There is such a large territory of the finest hardwood, that it should be easy to dispose of it to good advantage.

Yours very truly,

(Sgd.) G. W. BARTLETT,

*Park Superintendent.*

*Honourable G. Howard Ferguson,*

*Minister of Lands, Forests and Mines,  
Toronto, Ontario.*



*Appendix No. 38.*

## QUETICO PROVINCIAL PARK.

## SUPERINTENDENT'S REPORT.

KAWENE P.O., October 31st, 1919.

HONOURABLE SIR,—I beg to submit my report for the fiscal year ending October 31st, 1919.

The staff consisted this year of ten rangers, and this I think is not enough to patrol the area properly. During the season the water has been exceptionally low, making canoeing much more difficult, and necessitating the cutting of many new portages and building of small dams. The Eva Lake narrows became so low that it precluded the passage of our barge with supplies, and to overcome this difficulty I had a dam built on the outlet which will hold the water at a normal level, thus preventing trouble in the future.

Some small fires occurred in the Park this summer, but little damage was done, as they ran in old cuttings mostly, and were got under control before reaching timber of value. These fires were caused by lightning, except one which no doubt was due to a campfire left burning, but we could not ascertain which of three parties was responsible.

Influenza caused us much worry and trouble in the forepart of the season. Ranger Harry Mack contracted the disease, and died on Basswood Lake although he had every attention and the best medical aid available.

Moose are very numerous and may be seen anywhere. Deer are also increasing rapidly. Very few moose calves have been seen this summer. This has been remarked by many in the vicinity, but is as yet unaccounted for. Beaver-dams may be found on nearly all lakes and rivers. Smaller fur-bearing animals are also increasing. Seven large timber wolves were brought in by my rangers last winter for which they received bounty. No doubt many more were killed although not found. These animals are terribly destructive on deer, especially in the spring when a crust forms on the snow. The carcasses of deer partially devoured are often seen, and at this time of the year the wolves seldom visit the carcass a second time, preferring to kill a fresh victim.

Suitable men for rangers have been very hard to get this year, there being a great demand for bushmen in this section. The Shevlin-Clarke Co., of Fort Frances, are operating five lumber camps in the Park this season, mostly in the vicinity of Quetico and Beaverhouse Lakes. Their output will be about twenty millions.

We have had two very heavy snow storms since October 21st, followed by cold weather, which stopped canoeing and blocked our trails with snow-laden trees. All my available men have been working to clear our telephone line and a trail to Kawene.

I am preparing to take a quantity of beaver and other fur from the Park as instructed by you and expect a goodly catch.

One hundred and ninety-five dollars have been collected for Fishing and Guides' Licenses this year, and no doubt many more tourists would visit here were it more easy of access to the railway. I have received some communications

from officials of the C.N.R. Company regarding accommodation for tourists at Kawene station, but nothing definite has been proposed.

I have the honour to be, Sir,

Your obedient servant,

(Sgd.) HUGH McDONALD,  
*Superintendent Quetico Park.*

HON. GEORGE HOWARD FERGUSON,  
*Minister of Lands, Forests and Mines,  
Toronto, Ont.*

*Appendix No. 39.*

COLONIZATION AND IMMIGRATION.

*To the Honourable G. Howard Ferguson, Minister of Lands, Forests and Mines,  
Toronto, Ontario:—*

SIR,—I have the honour to submit the following report of the Bureau of Colonization for the fiscal year ending October 31st, 1919:

Number of letters received .....	9,381
Number of letters sent out .....	7,781
Literature dispatched includes—	
“ A New Land Nearby ” .....	28,568
“ Farming Opportunities in Ontario ” .....	
“ Hints to Settlers in Northern Ontario ” .....	
“ Ontario Handbook ” .....	
“ Greater Ontario ” .....	
“ Heaton's Opportunities in Ontario ” .....	
“ The Province of Ontario in the War ” .....	
Ontario maps .....	7,177
Railway certificates issued to settlers proceeding to Northern Ontario (including 821 adults and 50 children) .....	725

The above figures, compared with those of last year, are indicative of the growing interest in Old and Northern Ontario, particularly the latter. Our new booklet, “ Northern Ontario,” was circulated extensively during the year, and we conducted our usual newspaper and magazine advertising, but apart from these mediums there has been an appreciable increase of enquiries from homeseekers and others, mainly from the Western Provinces, the U.S.A. and Great Britain.

Our Northern Ontario exhibits at the Canadian National Exhibition, Toronto, and the Central Canada Exhibition, Ottawa, proved greater features of attraction than ever before. Continuous streams of interested visitors called daily and our representatives dispensed information on the possibilities of the North in general. A free-to-all motion picture show exhibiting the industries of the North, such as agriculture, mining, lumbering, fishing, etc., also accompanying lectures by a representative gave the visitors, many of whom had but little knowledge of the vastness, resources or possibilities of this section of the Province, educative and



Ontario Government Experimental Plot, Ground Hog River, Northern Ontario.



Modern Barns and Silo, Northern Ontario.

interesting entertainments. After seeing the "movies" and the products, an elderly farmer exclaimed, "Those roots, vegetables and grains are wonderful. I really can hardly believe it."

Now that the war is over, the outlook in regard to immigration and colonization has been changed to a very marked degree. Through our office at 163 Strand, London, England, an energetic campaign is being carried on in the United Kingdom with a view to attracting British capital, farmers, farm labourers and domestic servants to our Province. There can be no doubt that considerable capital, as well as many settlers, will be the result of advertising, lectures, correspondence and personal interviews, as well as the distribution of thousands of pieces of literature, together with the "boosting" that our soldiers gave Ontario while abroad. Our Agent-General advises me that his office is besieged daily by intending settlers and that his staff are forced to work overtime distributing information. The work, of course, is confined mainly to securing farm labourers and domestic servants. For a good many years this office has proved of great use in connection with migration of people from Great Britain who desire to make new homes for themselves in Ontario. A very efficient organization has been perfected for assisting emigrants in their journey to Ontario. From time to time personally conducted parties are arranged, each under the care of an experienced traveller. The first of these parties, since the beginning of the war, recently arrived, consisting of sixty-three domestics. These girls were as fine a type of womanhood as could be wished for, and all, I am sure, will prove their worth.

During the coming year of reconstruction this Bureau will undoubtedly be instrumental in playing no small part in the upbuilding of this, the banner Province of the Dominion.

I have the honour to be, Sir,

Your obedient servant,

H. A. MACDONELL,

*Director of Colonization.*

Toronto, October 31st, 1919.

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*Appendix No. 40.*

REPORT OF THE FORESTRY BRANCH, 1919.

SIR,—The report of the work of the Forestry Branch for the year ending 31st October, 1919, is given under the three sections of Forest Protection, Reforestation and Forest Pathology.

I. FOREST PROTECTION.

(1) *Legislation.*

The past season is the third during which this Branch has been charged with the work relating to The Forest Fires Prevention Act of 1917. No changes have been made in the Act since the last annual report, but this season's experience





Twenty-five Cords of Pulpwood, Northern Ontario.



Trophies of the Deer Hunt, Northern Ontario.

indicates that amendments in two directions are desirable. In some instances this summer it was found that local labour could not be engaged to fight fire no matter what wage was offered, and such cases should be provided for in the Act by a compulsory clause. Most modern forest fire legislation contains such a provision. A further amendment is needed to cover deliberate defiance of the Permit Regulations. At present infringements can be punished by a fine only, and this becomes merely nominal, in fact cheap land clearing, under certain conditions. Accordingly the power of imprisonment should exist in the Act to serve as sufficient deterrent.

## (2) *Organization and Personnel.*

For administrative purposes the forest region of Ontario is divided into four inspectorates, as follows:

(1) Western Inspectorate—Rainy River, Kenora, Thunder Bay.

(2) Northern Inspectorate—Timiskaming (exclusive of Timagami), Clay Belt area in northern Algoma.

(3) Central Inspectorate—Algoma, Sudbury, eastern Timagami, northern Nipissing.

(4) Southern Inspectorate—South of French and Mattawa Rivers.

The above territory was handled as 30 ranger districts with a field force composed of: 1 Superintendent, 4 Inspectors, 30 Chief Rangers, 49 Deputy Chief Rangers, 1,014 Rangers (during peak of season).

The fire season opened late, the weather being comparatively wet, so that men went on duty slowly. In April, a small force was engaged in getting equipment ready and the work as a whole organized. On May 1, there were 152 on the pay lists, and this number was slowly increased so that by the middle of May one-half of the staff were on duty, and by the end of the month the force numbered 900. This represented a considerable saving as compared with May of last year. During the critical months of June, July, and August the staff averaged 1,014 men daily. With September the weather once more became favourable, and the field force was gradually reduced, being down to half strength by the 18th, and numbering 126 by September 30. A small number was kept on at work into October to overhaul and store equipment.

The average daily force was: During April, 26; May, 548; June, 1,007; July, 1,025; August, 1,009; September, 611; October, 29. The total number of persons employed for at least a part of the season was 1,338; of these, 276 resigned after a time, and 51 were dismissed for various reasons.

The expenditure for the fiscal year was as follows, the figures for 1918 (rounded off) being given for comparison.

### CLASSIFICATION OF EXPENDITURE, 1919

—	1919	1918	—	1919	1918
	\$ c.	\$ c.		\$ c.	\$ c.
Pay roll .....	405,212 30	416,500 00	Extra fire fighting ....	53,863 92	1,445 00
Equipment .....	22,899 02	28,350 00	Express, postage, etc.	5,646 47	5,365 00
Expendable property....	13,903 06	10,700 00	Miscellany .....	5,955 02	.....
Travel (Inspection)....	15,826 37	13,440 00			
Improvement work ....	4,765 35	4,280 00	Total .....	528,071 51	480,080 00

Against this total stands the fire tax collected from licensees. Geographically the expenditure was approximately, thus:—

Central Inspectorate .....	41%
Western Inspectorate .....	22%
Northern Inspectorate.....	21%
Southern Inspectorate .....	16%
	<hr/> 100%

### (3) *Fires.*

The summer of 1919 was characterized by an unusually prolonged drought, and the fire season was a bad one. The early part of May was wet, but after that came three months which were abnormally dry. Under such conditions fires became more numerous than usual, and also assumed much larger proportions. This is seen in the number of fires reported for June, July and August—414, 613, and 377 fires respectively—as against 296, 141 and 192, the average for 1918 and 1917.

The situation became serious first in the Clay Belt region. From the settlers' point of view this season was more satisfactory than either 1918 or 1917 for land clearing operations, because conditions were favourable to a "good burn." From the nature of things the activity in land clearing increases as the weather conditions develop which render it more dangerous. Thus, almost as many permits were issued in the first half of June as were granted during the whole of that month last year. It must be kept in mind that the welfare of such new agricultural settlements is bound up with land clearing by fire, and it is necessary to adopt a considerable latitude of risk in order not to hamper pioneer farming operations unduly. In an average year one counts on occasional showers which help to extinguish the dying fires which are seldom absolutely out when the permit expires. But this season it was otherwise. The situation developed rapidly, for some 4,300 fires had been set out under permit, a large percentage of which had not died out after the ordinary way. By June 21, existing permits had been cancelled and the issuance of new ones stopped. No rain fell, however, till the early part of August. The result was that old, clearing fires gradually enlarged and met, and that sparks from these set fresh areas of slash on fire. Added to these, of course, was a larger number than usual due to railways, campers, etc. The situation was enlarged by certain persons taking advantage of the existing confusion to defy the permit suspension order. In fact, the number of fires reported from the Northern Inspectorate, despite the small area, reached almost one-quarter of the number for the Province. The situation was aggressively faced and fires fought vigorously everywhere. The long drought, however, made water scarce in many regions, and even the peaty soil turned up in trenching around fires at last became a case of merely adding more fuel. Considerable loss in buildings and crops occurred, but no loss of life. There is no doubt that the permit system in enabling control of setting out fire averted a more serious result.

The total area reported burned over in the Northern division was 58,383 acres or 6.3 per cent. of the whole for the Province. Considerable of this acreage had been previously burned in 1916 and 1911. The largest fires were in the Cochrane and Timmins ranger districts. Among the townships suffering most were O'Brien, Shackleton, Calder, Leitch, Blount, Clute, Lamarche, Brower, Fox, Newmarket, Dundonald, Matheson, Bristol, Ogden, Mountjoy and Tisdale. In the



Matheson ranger district the townships of Clergue, Carr, Playfair and Pacaud had considerable fire.

But while much damage was done in the Northern Inspectorate it was relatively insignificant when one turns to a consideration of the fire record in the Central Inspectorate. The fires in the north were largely on lands being cleared or which will eventually be cleared for farming purposes. From the one standpoint of the timber supply of the Province they are of less concern than in the case of those regions which are to remain centres of timber production. The Central Inspectorate embraces roughly the middle portion of the white pine belt in Ontario, and little of the soil is suited to agricultural pursuits. Fire in this region means not only the loss of standing timber, but also the growing crop for future logging.

In this inspectorate the area reported burned over totalled 618,496 acres. The largest fires occurred in the Chapleau, Sudbury, Webbwood and Soo Ranger Districts. In the strip of country between Lake Nipissing and Sault Ste. Marie, lying south of the Mississagi forest reserve, approximately 522,000 acres were reported burned over—in other words, around 13 per cent. of this region. Large general fires occurred in the townships of Curtis, Gillmor, McMahon, Morin, 201, 195, Bridgland, Wells, Grasset, 182, 175, 169, 168, 167, Mack, Striker, 145, 144, 143, Proctor, 132, 131, 130, 129, 120, Bigelow, Dunlop, Merritt, Craig, Moncrieff, Totten, Cascaden, Trill, Dowling, Foster, 91, 90, 83, 82, 10, Blezard, Neelon, Dill, Dryden, Cleland, Burwash, Street, Hawley, Hagar, Appelby, Latchford, Bertram. In quite a number of cases whole townships were swept over.

The Western and Southern Inspectorates also suffered severely—to the extent of 181,458 acres and 63,824 acres, respectively. In the former, the Nipigon, Rainy River and Thunder Bay districts suffered most; and in the latter, Muskoka and Parry Sound.

The total area reported burned over in the Province in 1919 was 922,161 acres, or 1,441 square miles. It is hard to realize what such an area is, but a conception may be formed by trying to visualize a strip of country six miles wide from Toronto to North Bay.

No complete estimates of the loss are available. Included in the total burned area are 247,266 acres of land classed as timbered, mostly with white pine. At the extremely low estimate of 1,000 feet per acre, this would mean as much timber as the Province received dues on last year. Of course, some of the damaged timber will be salvaged. Heavy losses were also sustained by lumber concerns by the burning of camps, logging equipment, supplies and sawmills. These losses, of course, must ultimately be passed on to the consumer.

In addition, there were burned over 251,355 acres classed as “logged over with some timber left,” and 233,196 acres of young growth; in other words, around 485,000 acres of cut-over lands. The loss here is very high because it means the wiping out of a large potential crop without any salvage. To put that crop back artificially by planting would take at least \$5,000,000, to say nothing of the loss in time as represented in the age of the burned stands of young trees.

Before going into a discussion of the situation presented above it may be well to point out that forest protection in Ontario has three distinct phases. In the Clay Belt country the yearly expenditure is proportionately high because of the permit system and the scattered nature of this work. It is not justifiable on timber account alone, because most of the region will not be kept as a permanent timber area, but will pass to farming. A part of the cost of protection in this



district is chargeable to making life and property in general safe. Another phase appears in connection with land under license; here the lumberman's timber must be protected because he pays a fire tax, while the Crown is further interested in the unmerchantable young growth on the limit. The third phase is to be found in the immense area of cut-over land, largely reverted to the Crown. Protection of this is necessary if we are to have any timber from which to derive revenue in the future. In fact, expenditure on this account is more justifiable than for unlicensed timber, because it is usually possible in case of fire damage to arrange for logging the latter at once. Adequate protection of cut-over lands is expensive, because they are acreages of the highest hazard owing to the logging slash. For the same reason the fires are extremely hot and resulting damage to the young trees is high. The only definite information that we have regarding the effect of repeated forest fires upon the restocking of pine lands in Ontario is derived from a report on a study, a few years ago, of 85,000 acres in the southern part of the pinery. This study showed that the numbers of young pine trees one inch and above in diameter surviving after fire were as, 110, 14, 7 and 3 trees per acre, according as the area was burned severely, once, twice, three or many times. These figures demonstrate the great damage done by fire to cut-over lands. As already pointed out, some 485,000 acres of such lands were burned over this season. Protection of this type of forest land is by far the cheapest method of producing forests, even if general tree planting were within the financial ability of the Province.

#### CLASSIFICATION OF FOREST FIRES, 1919.

By Month	1919	By Origin	1919	1917-1918 aver- age			By Size	1919	1917-1918 aver- age		
	No.		No.	%	%			No.	%	%	
May .....	362	Settlers.....	137	7.7	8.2	1/4 ac. and under.....	543	30.5	38.4		
June .....	414	Campers.....	163	9.2	11.2	Over 1/4 to 5 ac.....	493	27.7	26.6		
July .....	613	Railways.....	659	37.0	48.0	Over 5 to 10 ac.....	109	6.1	5.4		
August.....	377	Lightning.....	54	3.0	3.3	Over 10 to 100 ac...	293	16.5	11.6		
September..	14	Logging operations.	44	2.5	4.1	Over 100 to 500 ac...	155	8.7	4.9		
		Miscellaneous.....	76	4.3	4.1	Over 500 ac.:			13.1		
		Unknown.....	647	36.3	20.5	500-1,000.....	58	3.3			
						1,000 to 10,000...	105	5.9			
						Over 10,000.....	24	1.3			
	1780		1780	100.0	100.0		1780	100.0	100.0		

*Railway Fires.*—Of the fires occurring along railway lines, 659 fires were attributed to railway origin, either defective locomotives or employee carelessness. This was 37 per cent. of the total number of fires reported for the season, a gratifying improvement over the record for 1918 and 1917. But, as the table of locomotive inspections farther on shows, there is opportunity for better results yet, since there is no reason why all companies cannot reach the standard of the best one in this respect.

## FIRES OF RAILWAY ORIGIN, 1919.

Railway	Mileage forest section	No. of fires	Per cent of railway fires
C.N.R. (exclusive of Transcontinental).....	1,455	162	24.6
C.N.R. (Transcontinental).....	950	171	25.9
C.P.R.....	1,430	173	26.3
T. & N.O.....	253	118	17.9
G.T.R.....	375	23	3.5
A.C. & H.B.....	330	10	1.5
A.E.....	95	2	0.3
	4,888	659	100.0

*Other Causes.*—The tourist, surveyor, prospector, fisherman, berry picker, picnicker, etc., were responsible for 9.2 per cent. of the total fires. Settlers caused 7.7 per cent. of the fires. In all, 23 persons were prosecuted for violations of the Permit Regulations, and convictions secured in 20 cases. The percentic increase in fires whose origin was not determined is a direct result of the general fire conditions of this season.

*Area Burned.*—Thirty per cent. of all fires did not exceed one-quarter acre in size, and nearly 60 per cent. of them did not get beyond 5 acres in extent. The corresponding figures for last year were 40 and 75 per cent. respectively. Over 10 per cent. of the fires exceeded 500 acres.

The total area reported burned over was 922,161 acres, classified thus:—

Timber land.....	217,266 acres	(26.8%)
Cut-over land (with some timber left).....	251,355 "	(27.3%)
Young growth (below 6 inches diameter).....	233,196 "	(25.3%)
Barren and grass land.....	190,344 "	(20.6%)
	922,161 acres	100.0%

## CLASSIFICATION OF FOREST AREAS BURNED OVER, 1919

Ranger District	Number of fires	Timber land mainly coniferous (i.e. softwood)	Timber land mainly hardwood	Cut-over land, some softwood left	Cut-over land, some hardwood left	Young growth mainly coniferous	Young growth mainly hardwood	Barren land	Grass land	Totals (acres)
<b>I. Western Inspectorate—</b>										
1 Kenora District.....	49	876	.....	1,500	.....	1,493	79	2,759	23	6,730
2 Rainy River.....	64	15,348	250	6,000	6,000	1,020	2,649	45	11	31,323
3 Thunder Bay.....	103	2,520	10	6,894	228	3,313	4,138	7,034	49	24,186
4 Nipigon.....	18	67,863	7	.....	.....	700	.....	9,030	7	77,607
5 C. G. R.—Western.....	79	2,240	.....	.....	.....	686	3	816	21	3,766
6 C. G. R.—Central.....	92	54	.....	.....	.....	10,456	3,420	23,906	10	37,846
<b>II. Northern Inspectorate—</b>										
1 Hearst.....	405	88,901	267	14,394	6,228	17,668	10,289	43,590	121	181,458
2 Cochrane.....	14	176	.....	.....	569	.....	.....	10	.....	755
3 Abitibi.....	212	2,264	12	982	.....	1,087	777	6,472	131	11,725
4 Timmins.....	11	1,236	.....	2,072	.....	75	5	3,078	6	5,472
5 Matheson.....	23	1,075	.....	11,676	60	307	.....	14,206	2	27,326
6 New Liskeard.....	94	631	.....	344	260	332	445	2,778	18	4,808
	61	1,836	21	1,240	100	1,125	448	3,518	9	8,297
<b>III. Central Inspectorate—</b>										
1 Soo.....	415	6,218	33	16,314	989	2,926	1,675	30,062	166	58,383
2 Webwood.....	40	21,202	2,040	10,520	34,440	9,230	19,160	2,920	17	99,529
3 Sudbury.....	56	75,310	19,630	40,515	95,338	44,370	44,945	36,251	19	356,378
4 North Bay.....	80	6,032	1,500	5,867	3,050	7,854	27,190	14,615	13	66,121
5 Mississagi.....	19	6	29	500	501	413	741	1,828	12	4,030
6 Chapeau.....	19	15,365	300	3,564	.....	18	.....	40	2	19,289
7 Foleyet.....	71	2,262	300	2,295	.....	11,291	7,981	22,566	6	46,701
8 Timagami, W. & S.....	111	201	.....	4,025	.....	104	458	4,071	5	8,864
9 Timagami, East.....	13	151	.....	1,920	7,040	1,436	.....	2,720	3	13,270
10 Timagami, North.....	15	53	.....	.....	.....	14	7	.....	1	75
11 T. & N.O., South.....	21	407	.....	40	11	130	153	3,467	1	4,209
	82	.....	.....	.....	.....	.....	1	17	12	30
<b>IV. Southern Inspectorate—</b>										
1 Parry Sound.....	588	120,989	23,799	69,246	140,380	74,860	100,636	88,495	91	618,496
2 Muskoka.....	63	2,380	7	1,650	868	3,204	4,280	3,057	14	15,460
3 Algonquin, North.....	70	2,501	58	880	.....	8,752	4,113	18,672	149	35,125
4 Algonquin, South.....	87	826	.....	.....	.....	190	649	1,168	59	2,892
	63	830	.....	400	6	112	398	3,443	7	5,196

5 Madawaska .....	14	25	27	.....	.....	2,022	202	891	14	3,181
6 Trent .....	70	352	53	.....	.....	16	1,177	121	16	1,735
7 Eastern Reserve .....	5	.....	.....	.....	.....	2	25	202	6	235
	372	6,914	145	.....	874	14,298	10,844	27,554	265	63,824
Totals .....	1,780	223,022	24,244	102,884	148,471	109,752	123,444	189,701	643	922,161
Per Cent. ....	.....	24.2	2.6	11.2	16.1	11.9	13.4	20.6	0.07	100.00
1918 Totals .....	965	3,123	1,634	5,661	5,513	1,797	5,303	6,465	676	30,172
1917 Totals .....	1,110	73,160	135	148,408	2,160	61,806	13,202	82,959	2,334	384,164



(4) *Permits.*

Forest protection in a considerable portion of the northern Clay Belt is largely effected through control of land clearing fires by the permit system. This system is costly, since a large force of rangers is required owing to the scattered nature of the work. Permits were issued in 136 townships. This is not such a large area if the work were consolidated, but scattered townships require the same number of men to issue permits whether the number used in a season be large or small. For instance, there were 80 townships in which not over 25 permits per township were issued in the whole season; and there were only 25 townships in which more than 100 permits each were called for. As time goes on, however, and a township becomes more cleared and mostly patented, there seems no reason why the municipality should not be called upon to provide for the protection of its own property.

The number of permits issued the past season was relatively small since the weather and fire conditions led to the general suspension of permits from June 21 until into August. During that period permits were issued only in a few localities where conditions made it safe. In all, 6,635 permits to burn over 26,790 acres were issued, as compared with 9,590 permits in 1918, and 3,486 in 1917.

## STATEMENT OF PERMITS, 1919.

Ranger District	Number of Permits		Area Burned Over 1919
	1919	1918	
Cochrane.....	2,275	3,493	5,437 acres
Matheson.....	1,691	2,346	4,760 "
New Liskeard.....	1,557	2,179	13,521 "
Hearst.....	702	514	1,379 "
Timmins.....	199	651	925 "
Remaining 11 districts.....	211	407	768 "
	6,635	9,590	26,790 acres

## MONTHLY SUMMARY OF PERMITS, 1919.

Month	Number		Area 1919
	1919	1918	
May.....	1,536	2,248	5,636 acres
June.....	2,786	2,899	12,607 "
July.....	496	2,050	2,197 "
August.....	1,475	2,156	5,333 "
September.....	342	237	1,017 "
	6,635	9,590	26,790 acres

For infractions of the Permit Regulations 23 persons were prosecuted, and convictions secured in 20 cases. As already pointed out, it is desirable that the Act be amended to allow a jail sentence in flagrant cases.

### (5) *Improvement Work.*

The character of the fire season permitted very little attention to new projects along the lines of improvement work. Time was found for very little telephone, trail or cabin construction. The new headquarters buildings for the Nipigon reserve were completed, an equipment storehouse built at Fort Frances, and a combined storehouse and boathouse at Kenora.

### (6) *Equipment.*

With the opening of this season steps were taken to have all equipment, such as canoes, railway velocipedes, etc., and buildings painted the same colour and after a uniform pattern. Also all equipment was stencilled "Ontario Forestry Branch," and branded or stamped "O. F. B." with steel letters. In addition, all main articles of equipment such as canoes, boats, railway velocipedes, railway motor cars, tents, etc., were numbered on a definite system, to facilitate keeping records and to learn the life of different manufacturers' goods.

The major equipment added this year included: fifty canoes, seven large power boats, eighty tents, four hundred pairs of blankets, forty-five railway velocipedes, three railway motor cars.

The total equipment necessary for such a large organization requires the maintenance of about \$100,000 of stock. The Branch now has 10 Ford auto trucks, 10 power cruisers (30 feet and over), 6 smaller power boats, 400 canoes and small boats, 65 railway velocipedes, 8 railway motor cars, 430 tents, 2,000 pairs of blankets, 5 portable fire pumps with 7,700 feet of hose, besides very large numbers of camp stoves, axes, shovels, tools, cooking utensils, etc. There is still a shortage in spare equipment which should be on hand for emergency crews of fire fighters.

It may be in order to point out that provision for storage of such a large equipment calls for much space. Considerable warehouse space is rented yearly, but the following storehouses have been erected during the past three seasons: Gowganda, Gogama, Bisco, Cochrane, Nipigon, Fort Frances, Kenora. In addition to the above seven main storehouses, a number of boathouses, railway motor car houses, truck garages, hose houses, etc., have been built.

In addition to the usual quantity of fire signs, 12,000 calendars and 10,000 pencils with 10,000 rulers were sent out for educational effect. The calendars were of two types, one specially designed for distribution in the Clay Belt, and the other for tourist country. The pencils and rulers bearing appropriate fire warnings were placed in all the northern schools.

### (7) *Railway Inspection Under B. R. C.*

Two inspectors devoted their whole time to the inspection of fire protective appliances on locomotives, because of the large percentage of fires of railway origin. The railway mileage through forest section in Ontario is very great, approximately 5,000 miles, and more locomotive inspections are made in this Province than in the other provinces of Canada combined. A change was made for the past season in the basis of payment for inspection, with the result that 10 per cent. more inspections than in 1918 were made in 80 per cent. of the time, so that the average cost per inspection fell to \$2.07 as compared with \$2.59 in 1918.

LOCOMOTIVE INSPECTION, 1919.

Railway	Number Inspected					Total Number Locomotives	Total Number Inspections			Inspections Showing Defects	Percentage Defective		
	Times						1919	1918	1917		1919	1918	1917
	1	2	3	4	5								
C.P.R. ....	114	96	48	11	1	270	499	448	328	149	29.9	36.4	19.5
C.N.R. ....	78	47	30	10	3	167	317	232	154	49	15.5	22.4	39.6
G.T.R. ....	80	28	5	1	....	114	155	184	60	17	11.0	28.3	20.0
A.C. ....	7	8	....	....	....	15	23	36	37	3	13.0	38.8	45.9
A.E. ....	....	1	1	2	1	5	18	20	36	3	16.7	70.0	55.5
						571	1,012	920	615	221	21.8	32.1	28.3

Average cost per inspection \$2.07 (as compared with \$2.59 for 1918)

In all, 1,012 inspections were made of 571 locomotives, and of these, 221 inspections or about one in five showed fire protective appliances defective in one respect or another. This is a decided improvement over the years 1917 and 1918 for which the average was 30 per cent. defective. Further, the record for this year would have been very much better if the C.P.R. had kept its engines up to the standard of the other roads. C.P.R. locomotives were defective to the extent of almost 30 per cent., and in 1918 it was 36.4 per cent. If one road can keep its defective locomotives down to 11 per cent. of inspections, it should be possible for all other roads to reach the same record; the matter is entirely one of organization. This matter is of extreme importance in Ontario because of the large number of fires of railway origin.

Because of the unsatisfactory results in past seasons with special patrolmen put on by the C.N.R. between Pembroke and Nipigon as a Board requirement, this year it was arranged that the Forestry Branch take over the work, the company paying part cost. The arrangement has been justified by the relatively low fire damage along the C.N.R. this season.

Thirty-six inspections of locomotives on private lines used in logging, etc., were made and the owners required to be brought up to the equivalent of B. R. C. specifications under authority of the Provincial Act.

(8) Summary.

The disastrous fire season we have experienced calls for a close examination. The season was undoubtedly a difficult one for fire control, but this Branch feels that such a record is below the attainable; certainly it is below the average of several organizations protecting forest areas of similar magnitude.

As to origin of fires, a study of our statistics for the last three years shows a general uniformity. Apparently we may expect the following situation as regards causes:

About	8	per cent	due to	land clearing
10	"	"	"	" neglected camp fires
3	"	"	"	" lightning
3	"	"	"	" summer logging
5	"	"	"	" other known causes
45	"	"	"	" railways
26	"	"	"	" unknown causes

A reduction in the number of fires traceable to carelessness in land clearing and as regards camp fires will be a matter of slow education. Lightning fires as a rule do not reach large proportions. While fires caused in summer logging show a small percentage, these fires are frequently very costly. To reach the camps in operation it is necessary to pass over tote roads which are frequently piled up with slash from the previous season's operation. The question of general slash disposal should be considered, but in the meantime regulations should be adopted requiring the disposal of slash along main tote roads, about camps and dump grounds. Summer operators should also be required to give special assistance in fire patrol during dangerous periods.

The machinery for reducing railway fires exists. Various protective measures are required of the railways such as special patrol, clearing the right-of-way and keeping up proper protective appliances in locomotives, yet within a few feet of the right-of-way timber operators are allowed to create fire hazards which make fire prevention almost impossible when small grass fires get away from the right-of-way. Again, slash disposal within reasonable distance of railways is imperative if the problem is to be solved. Accordingly, we conclude that the problem is one of eliminating the causes as much as possible and then controlling fires which do get a start.

The public as a whole seem very slow to realize that forest fire protection differs in no way from general property fire protection as provided for in cities. The same principles underlie both—reduction of inflammable hazard, familiarity with conditions in all parts of the area under protection, early detection and speed in reaching the scene of the fire, and fighting by men specially trained for that work. Applying these in turn to forest property, we note that the hazard must remain high till the operation of logging carries with it as an integral part the disposal of the slash nuisance it creates. Early detection and early fighting is a matter of lookout towers, telephone systems, and strategic systems of roads and trails; while fighting forest fires is no more the work of an amateur than fighting city fires.

These considerations lead to the argument that forest protection calls for specially qualified men. The direction of the protective work in any district must be in the hands of a man who knows the basic principles of fire protection; who will make it his business to become thoroughly familiar with conditions of timber, hazard, settlement, etc., in every part of his district; who is capable of planning and constructing a system of lookout towers, telephone lines, roads, trails, etc., so as to make his district relatively safe at the least cost. Along with these, he must be able to follow instructions, to give an intelligent report on any field matter, to estimate burned timber, to administer the forest laws, Railway Act, etc. In short, he must have been previously trained in the principles and work of forest protection.

Turning to the existing system in Ontario, we find that each spring a temporary organization of around 1,000 men is built up, only to be disbanded every fall. During the last three seasons about one-half the ranger force has been new, inexperienced men each year. Any protection system must depend upon a permanent skeleton organization for efficiency. Moreover, this skeleton force must be made up of men with capabilities of the order outlined in the preceding paragraph. This is impossible if appointments are made on any other basis than the applicant's fitness for the work.



Forest fire control in Ontario will be at a standstill until it is recognized:

(1) That forest protection is a specialized business requiring a permanent trained organization, and

(2) That no organization can give efficient service without the adoption of the merit system in making appointments and promotions.

## II. REFORESTATION.

Reforestation is a term which is used in Ontario, in rather a loose way, with various meanings. Reforestation is frequently spoken of in a broad way to mean the regulation of timber operations to protect the young or second growth; that is, securing a new crop by leaving parent seed trees or undersized young growth which will eventually develop a future harvest. This may be spoken of as natural reforestation to distinguish it from artificial reforestation where a new crop is secured by planting either seed or young plants.

*Ontario presents two distinct problems in regard to reforestation:*

The securing of continuous wood crops on the Crown lands of the Laurentian plateau which comprise at least fifty million acres of northern Ontario.

The reforesting of the larger waste areas and assisting and encouraging the private waste land and woodland owner of southern Ontario.

The writer believes that artificial reforestation in the Laurentian plateau of the north is not feasible at present, although many districts within this region are at present almost destitute of the more valuable species such as pine and spruce. Before any consideration can be given this problem we must secure some assurance of reasonable protection for this area. Owing to the excessive cost of artificial reforesting we must do everything possible to regulate timber operations so that natural reproduction will be given some chance to insure future crops. During this last season we have had whole townships swept over with fire. To re-stock a thirty-six square mile township with pine or spruce would cost at least \$100,000.00. Our first problem in the forest regions of the Laurentian plateau is to secure a forest organization which will give adequate fire protection and regulation of cutting in order to insure natural re-stocking.

Turning to the problem in southern Ontario, where the land has largely left the Crown, we find that there exists only about 9 per cent. of woodland of inferior quality with many townships having less than 5 per cent.

In addition to the inferior wood lots and smaller waste areas of the farm, there exist throughout older Ontario many large areas of waste land almost devoid of tree growth, and in many cases composed of blowing sand.

While the industries of southern Ontario must largely depend upon the north for timber supplies, yet it is imperative that an effort be made to reforest these local waste areas if we are to secure a future wood supply. The writer believes that this problem can best be solved by the creation of demonstration forest stations throughout older Ontario similar to that now established in Norfolk county. These stations will not only reclaim waste lands but will supply planting material to private owners and will be a local demonstration of reforestation.

At the provincial forest station in Norfolk County we have about three hundred acres of forest plantations in various stages. These plantations are thriving and have become splendid demonstrations of what may be expected from work of this kind. The influence of this work is demonstrated in the fact that a large number of private owners in this district have taken advantage of the government

distribution of trees and have made some very good plantations on waste portions of their farms.

This last autumn a three-acre mixed hardwood plantation was made with the intention of experimenting on the relative values of the various hardwoods in artificial reforestation.

During the past season about forty thousand trees were shipped out to private planters. This is far below our pre-war output as our distribution at one time had reached about half a million trees. We have had difficulty in securing reliable seed of the kind of trees desired in connection with this work and it will take at least two years to reach a reasonable supply of nursery stock.

The work at this station, which has been held up during the war, should now be placed on a better basis. This will require improvements in buildings, a better watering system, more seed bed areas, in fact, a general enlargement of the plant if the growing requirements for trees are to be met.

The following is an approximate list of the nursery stock at the Provincial Forest Station in Norfolk County:

Scotch Pine seedlings.....	600,000
Scotch Pine transplants.....	40,000
White Pine transplants.....	30,000
Larch seedlings.....	50,000
Larch transplants.....	40,000
Miscellaneous conifers, as red pine, jack pine, cedar, etc.....	80,000
Miscellaneous hardwoods, as elm, sugar maple, white ash, black walnut, etc.....	100,000

In addition to the above stock, fifty bushels each, of red acorns and black walnut were collected and planted this autumn.

### III. FOREST PATHOLOGY.

The work in connection with tree diseases has been chiefly confined to the eradication of *Ribes* (currants and gooseberries) at the forest station in Norfolk and the investigations of Dr. Faull into diseases affecting trees in the Timagami region.

As indicated last year the general eradication of diseased *Ribes* cannot be carried out on a large scale throughout Ontario, but our efforts should be directed towards local control wherever white pine values warrant the expenditure. The work of eradication is being carried on at the Provincial Forest Station in Norfolk County. About 500 acres have been cleared of *Ribes* and it is expected that white pine can be grown at this station with little danger of infection. Last year the Department inaugurated work of investigation into the diseased condition of pine in the Timagami region. This work was continued this season and I am glad to report that valuable information has been obtained in respect to the "needle blight" which has become so prevalent in parts of Ontario. A report upon this work follows:

#### REPORT OF DR. J. H. FAULL FOR 1919.

##### *Sulphur Fumes.*

In the last week of May a trip was made into Cleland Township in the District of Sudbury for the purpose of observing the effects on the coniferous forest of sulphur fumes from winter roast beds located from four to six miles distant. The same area had been visited the preceding September in order to

check over conditions with respect to the needle blight of white pine—of which at that time there was little trace. Notes were made then on individual serially marked trees with healthy new leaves for reference the following spring. The forest as a whole was found to be in a much better condition than in the spring of 1918, the date of my first inspection. None of the marked trees had undergone any visible change, their foliage looking apparently as green as in the foregoing autumn. It was reported that roasting had not been begun until after the winter had set in, and had been discontinued before the oncoming of spring thaws. It seems not improbable that where damage has resulted in the past, it has been at temperatures above that of the freezing point. Strangely enough, there appears to be no definite information in the literature based on experiments with respect to the susceptibility of white pine and others of our native conifers to sulphur fume injuries at the lower temperatures.

### *"Needle Blight" of White Pine.*

Considerable attention was given during the summer to "needle blight" or "leaf blight" of the white pine, concerning which so many inquiries have been made by lumbermen through your office, in continuation of observations instituted in 1918. Throughout I was accompanied by Mr. A. W. McCallum, M.A., B.Sc.F., who was sent up as an observer by the Federal Government.

The "needle blight" is most abundant in the northern parts of the Province, but it also occurs in various other parts of Ontario, and in Quebec. Judging from inquiries received, it has widely attracted the attention of owners of white pine and has been the cause of some alarm. Reports of its occurrences and specimens have been sent in from Norfolk County, Barrie, Toronto, Ottawa, Nipissing District and elsewhere. The general situation, however, is better than in 1918.

The blight appeared this year in the latter half of June, just after the young needles were beginning to grow out, and as has been formerly observed was restricted to the new growth. The sequence of events was identical with the developments of 1918, although the blight developed almost a month earlier this year than last as there was a difference of about four weeks in the two seasons between the times of leafing. The new needles, usually on all parts of the tree, soon after they have emerged from the bud turn lighter in colour at the tips and then redden from their tips downwards. This process goes on for two weeks or more, the needles meanwhile growing in length from their bases; the resultant discoloration involves from a quarter to three-quarters, more or less, of each of the affected leaves. There is a remarkable uniformity in the extent of the discoloration in each tuft and each branch. No causal agent is evident in the diseased needles.

At first sight it appeared as though the blight was as severe as last year. In the Timagami Forest Reserve, where some hundreds of trees had been serially marked with metal tags or otherwise located, the frequency of blighted trees in some parts appeared to be undiminished. Thus standing on the observation tower at Bear Island and looking over miles of country all about, it was not possible to decide that there had been any marked amelioration. Everywhere there were scattered the bright reddened trees among the normal sombre conifers. A careful review was then made of the ground prepared the preceding summer.

Beginning with Rondeau Park on Lake Erie, four blighted white pines had been found there in 1918—no others were discovered. Mr. Geo. Coldworthy, the



Chief Ranger, who had accompanied me when these trees had been located, covered our course again in August and forwarded a report, backed up by specimens, showing that the same four trees were again badly blighted, and one other in the same neighbourhood.

Turning to the Timagami Forest Reserve, where in some areas a large percentage of the trees of all ages had shown the blight in 1918, and where extensive observations had been made, the results afford surer ground for the conclusions arrived at. The trees examined fall into three general classes—young trees with trunks up to 3 or 4 inches in diameter; large trees, many of them mature, with trunks 10 inches and upwards, and those that lie between. In the first instance it was found that there had been a general recovery. Thus on Island No. 976 where 75 per cent. or more had been affected in a count of all the young white pines on the eastern half of the island—a total of 400 trees, not more than 10 per cent. displayed blight this year. Those of the middle class exhibited greater variation. Some were again severely blighted, while others showed no signs of blight, and between these two conditions there were all grades. Almost invariably the recovered trees of this size were clothed with abnormally short needles, and often the foliage was scantier and paler than in healthy trees. The large trees, however, showed less than 1 per cent. recovery, and there was a mortality of about 5 per cent. Likewise there were scattered cases in this class of trees of what appeared to be new instances of blight; at all events, some vividly blighted trees were numbered for the first time that had been passed by in 1918—probably because of uncertainty as to their condition at that time.

A renewed effort has been made to discover the cause of "needle blight." As there are no causal organisms to be detected in the affected crowns, several hundred inoculations were carried out on healthy twigs of healthy trees with the juice from diseased foliage. Certain so-called physiological diseases are known to be contagious and such disorders have been communicated in this way. No results followed. The season before interlocking diseased and healthy branches of contiguous trees had been grafted at the point of contact. An examination showed that the branches had formed an organic union but that the virus, if there be one, had not been transmitted. The bark was then carefully examined throughout the entire extent of trunk and roots of diseased trees, and then stripped and the exposed wood examined. No indications of disease were manifest. The first signs of organic trouble were discovered in the root tips.

An examination of root tips of trees is an arduous business. Two methods were followed. First, the root system of a six inch blighted tree was exposed by carefully following the main roots outward from the base of the trunk carefully disentangling the branches and picking away the adhering soil and vegetation. Secondly, several isolated small blighted trees with trunks one to three inches in diameter were removed in their entirety from the shallow rock sub-soil characteristic of that region, and a number of healthy trees of similar size as checks. The root systems of these trees were carefully washed free from soil by vigorous immersion in water. A study of the cleaned roots located the seat of the trouble. The roots of the check trees were normal, the root tips were white, frequent and vigorous. By contrast the tips of the main branches of the root system of the diseased trees were almost invariably killed back from 4 to 12 inches or more. Some of the smaller lateral branches were not so clearly dead, but few appeared in good condition, and not one healthy main root tip was uncovered in the entire lot. It was at once apparent that the absorbing areas of the root system had



been destroyed. Therefore, it comes about that when there is a sudden increase in the water requirements of the plant, as at the time of leafing, the absorbing organs are unable to supply the demand; the succulent young needles are the first organs of the crown to exhibit the resulting distress. It also seems apparently sound to assume that young trees are able the more quickly to repair the damage done; and under favourable weather conditions, as in the summer of 1918, to produce new roots in sufficient amount to provide an increased, if not fully sufficient, flow of water for the growing leaves and tissues of the next season. The older, more nearly mature, trees, and especially as is so often the case if handicapped by a certain amount of butt rot, are incapable of recovery, or if so, must recuperate more slowly. It will be necessary to follow our trees of this group for a few years, and incidentally in the case of recovery to note the effect on wood accretion.

The cause of the disturbance to the root system remains undemonstrated. Drought seems the most reasonable explanation. It may be possible to test this theory out by a simulation of drought conditions and by a study of the course of these outbreaks in connection with the rainfall and temperature reports for affected districts. That severest blight occurs on shallow and on sandy soil appears significant in this connection. A more detailed account of needle blight will be prepared after the completion of the present investigation.

The following conclusions may be tentatively offered:

1. "Needle blight" is at present the most serious of the needle troubles of our white pine.
2. In some localities it will kill a good many trees and seriously retard the growth of others—to such an extent as to be reckoned with in determining the time at which a stand has attained maximum productivity.
3. It is at least a menace to young stands.
4. Young trees recover, older trees may recover though more slowly; a variable percentage of old trees die—according to observations so far, up to 5 per cent.
5. It is now possible to distinguish between sulphur fume injury, or winter injury on the one hand, and needle blight on the other.
6. The blight is not of biotic origin.
7. The blight is not a communicable physiological disease.
8. The blight is not contagious.
9. The blight is related to root injury—possibly due to drought.

#### SURVEY OF DISEASES OF TIMBER TREES IN ONTARIO.

A more extended survey was made of the diseases of the timber trees in Ontario, especially in the Timagami Forest Reserve. At least two new to science were discovered, and many not before reported for Ontario were found. Researches on some of those are now in progress. A first contribution to the list follows under the technical names of the causal agents. Collections were made of the various forms, both of the fungi and of the diseased hosts, and they have been catalogued and stored for future reference.

In addition, valuable collections have been received from the United States laboratories of plant pathology, from agents of the Canadian Conservation Commission, and the Forest Products Laboratory, Montreal, including a collection of fungi on diseased spruce pulpwood from Thorold, Ontario, and individual contributions from various other sources. Exchanges in some cases have been effected.

BALSAM (*Abies balsamea* (L.) Mill.)

*Armillaria mellea* (Vahl.) Quel. Not infrequent on the roots and also found causing heart rot of trunk—the latter an apparently unreported occurrence.

*Bjerkandera adusta* (Willd.) Karst. A form common on hardwoods, but rare on conifers.

*Calyptospora columnaris* (A. & S.) Kühn. This needle rust is common on balsam, and on its alternate hosts, the blueberries (*Vaccinium*), in the Timagami Forest Reserve, though not especially injurious. It appears to have been reported on balsam not more than once or twice previously from America.

*Coriolus balsameus* (Pk.) Murr. Not uncommon on dead wood. For the first time reported as the cause of a heart-rot.

*Frost injuries.* A great many small dead branches on living balsams are common throughout the Timagami Forest Reserve. An examination of the bases of these branches discloses a wound apparently caused by the gnawing of some insect, at the end of the growing season. Frost presumably completes the destruction.

*Fuscoporia marginella* (Peck) Murr. Rare on fallen trunks.

*Hyphoderma.* An interesting form, apparently the cause of a needle disease.

*Lophodermium nervisequum* Fries. Frequent on the living needles and sometimes causing complete defoliation.

*Macrophoma.* Common on the needles but whether or not the cause of their death remains undecided.

*Melampsorella elatina* (A. & S.) Murr. This rust which is the cause of the witches' brooms on balsam is not rare.

*Phaeolus sistotremoides* (A. & S.) Murr. (*Polyporus Schweinitzii* Fries). The cause of by far the worst disease of balsam and of most other conifers of the Timagami Forest Reserve. Some stands are fully 75 per cent. buttrotted by this fungus.

*Porodaedalea pini* (Thore) Murr. (*Trametes Pini* Fries). A common and important cause of heart rot of many conifers; in Ontario it is occasionally the cause of heart rot of balsam.

*Pucciniastrum pustulatum* (Pers.) Diet. Common, and found both on the needles of the balsam and the leaves of its alternate host, the fireweed (*Epilobium angustifolium*).

*Spongipellis borealis* (Fries) Pat. (*Polyporus borealis* Fries). Cause of a heart rot, apparently not frequent.

*Uredinopsis mirabilis* (Peck) Magn. Common on the leaves of the balsam and its alternate host, the ferns (especially the beech fern, *Phegopteris dryopteris*).

*Valsa Friesii* (Duby) Fekl. Apparently the cause of cankered branches.

WHITE SPRUCE (*Picea canadensis* (Mill.) BSP.)

*Phaeolus sistotremoides* (A. & S.) Murr. White spruce is fairly free from fungus diseases in the Timagami Forest Reserve. This and the one following are the two commonest causes of heart rot.

*Porodaedalea pini* (Thore) Murr.

*Tyromyces guttulatus* (Pk.) Murr. Infrequent on dead wood.

BLACK SPRUCE (*Picea mariana* (Mill.) BSP.)

*Arceuthobium pusillum* Peck. The dwarf mistletoe is not uncommon on black spruce throughout Ontario. In some cases entire swamps are badly diseased, the trees loaded with witches' brooms, due to the stimulation of this parasite.

*Armillaria mellea* Quel. Frequent on the roots. It is also reported here for the first time as the cause of a heart rot.

*Coltricia tomentosa* (Fr.) Murr. Occasional on roots.

*Fomes roseus* (A. & S.) Cooke. Occasional on dead wood; whether or not the cause of a heart rot remains undetermined.

*Fomes unguatus* (Schaeff.) Sacc. Very abundant on dead wood. It has also been found causing heart rot.

*Melampsoropsis abietina* (A. & S.) Arth. This leaf rust and the following one are abundant, in some cases causing considerable defoliation. They are reported here on both hosts, namely, black spruce, and Labrador tea (*Ledum groenlandicum*).

*Melampsoropsis cassandrae* (Peck & Clint.) Arth. This rust, as in the case of the last, is reported here as wintering over in the alternate host. Found on both hosts in the Timagami Forest Reserve, namely, black spruce, and cassandra (*Chamaedaphne calyculata*).

*Phaeolus sistotremoides* (A. & S.) Murr. Common, and like the following, the cause of a destructive heart rot.

*Porodaedalea pini* (Thore) Murr.

*Tyromyces anceps* (Pk.) Murr. This fungus has been regarded as very rare in eastern America, but in our northern country it is found to be the frequent cause of decay in the fallen trunks of various conifers.

BANKSIAN OR JACK PINE (*Pinus banksiana* Lamb.)

*Cronartium cerebrum* (Pk.) Hedg. & Long. This stem rust occurs abundantly and often destructively on the jack pine. It is also found abundantly on the leaves of the red oak in the Timagami Forest Reserve, on which, however, it causes no appreciable injury.

*Cronartium comptoniae* Arth. This interesting stem rust of the jack pine was found on both of the alternate hosts, the sweet fern (*Myrica asplenifolia*) and sweet Gale (*Myrica Gale*). It is quite certain that it will be found on its coniferous hosts in the Timagami Forest Reserve, the locality referred to in this note.

*Cronartium pyriforme* (Pk.) Hedg. & Long. Found on its alternate host, the bastard toad-flax (*Comandra umbellata*), south of Parry Sound. It is to be expected that this stem rust will be found on the jack pine in Northern Ontario.

*Lophodermium pinastri* (Schw.) Chev. Frequent and causing more or less extensive leaf fall.

*Phaeolus sistotremoides*. This together with the following are the commonest cause of heart rot in this pine.

*Porodaedalea pini*.

RED PINE (*Pinus resinosa* Ait.)

*Cronartium cerebrum* (Peck) Hedg. & Long. A rare rust on red pine in the Timagami Forest Reserve.

*Fomes roseus* (A. & S.) Cooke. Fairly common on dead wood.

*Phaeolus sistotremoides*. This, together with the following are the commonest cause of heart rot in this pine.

*Porodaedalea pini*.

*Tyromyces anceps* (Peck) Murr. On dead wood.

*Coleosporium solidaginis* (Schw.) Thum. Abundant on asters as an alternate host. It is to be looked for on the needles of both the red and jack pine.

#### WHITE PINE (*Pinus strobus* L.)

*Cronartium ribicola* Fischer. This destructive stem rust of white pine is widely distributed throughout southern Ontario on white pine and on various Ribes. It has not yet been found in Northern Ontario.

*Lophodermium pinastri* (Schr.) Chev. A cause of leaf fall, but apparently not serious.

*Polyporus osseus* Kalch. Infrequent, possibly the cause of a not hitherto reported heart rot.

*Phaeolus sistotremoides*. Very common, doing extensive damage to mature or nearly mature timber.

*Porodaedalea pini*. A serious heart rot, common in some localities. The white-spotted lumber made from diseased trunks is utilizable to a certain extent such as is not the case with the last.

*Tyromyces anceps* (Pk.) Murr. On fallen trunks.

#### WHITE CEDAR OR ARBOR VITAE (*Thuja occidentalis* L.)

*Armillaria mellea* (Vahl.) Quel. Apparently a common root-rot of cedars of all ages. Is also reported here for the first time as a cause of heart rot.

*Coriulus balsameus* (Pk.) Murr. Found by Mr. A. W. McCallum for the first time as a probable cause of a heart rot of cedar in the Timagami Forest Reserve.

*Keithia thujina* Durand. An extremely interesting leaf disease of cedar. This fungus has recently been reported as the cause of a highly destructive leaf blight of young western cedars on the Pacific coast. Little else except the original record of its occurrence in Wisconsin is known, so that the finding of it in the Timagami Forest Reserve is of special interest.

*Pestalozzia spec.* The cause of a leaf disease.

*Phaeolus sistotremoides* (A. & S.) Murr. Probably the cause of the commonest of the heart rots of the cedar in Northern Ontario.

*Porodaedalea pini* (Thore) Murr. Reported for the first time as the cause of a heart rot in arbor vitae.

I have the honour to be sir,

Your obedient servant,

E. J. ZAVITZ,

Provincial Forester.



*Appendix No. 41.*

## FUEL SUPPLY—WOOD-CUTTING PERMITS TO MUNICIPALITIES.

Attention was directed in the Annual Departmental Report for 1918, to the efforts of the Department toward relieving the fuel situation in various municipalities throughout the province. The Crown Timber Agents were instructed to select areas upon which wood was suitable chiefly for fuel purposes. They were instructed to co-operate in every way with the municipal authorities in locating such areas.

In cases where suitable areas were found to exist, and where municipalities applied to cut thereon, permits were issued for the cutting of fuel free of Crown dues.

Returns which have been received indicate that the following quantities of wood have been cut by the municipalities indicated:—

Municipality of Port Arthur .....	1,879	ords.
Town of Keewatin .....	326	"
Municipality of Bucke .....	200	"
Town of Kenora .....	1,115	"
City of Fort William .....	211 $\frac{3}{4}$	"
Municipality of North Bay .....	781 $\frac{1}{2}$	"
City of Port Arthur .....	2,828	"
Total .....	7,341 $\frac{1}{4}$	"

In addition, mention might be made of the large quantities of fire-wood secured by operations in Algonquin Park.

JOHN HOUSER,  
*Chief Clerk.*

ALBERT GRIGG,  
*Deputy Minister.*

*Appendix No. 42.*

HONOURABLE G. HOWARD FERGUSON,  
*Minister of Lands, Forests and Mines,*  
Toronto, Ont.

SIR,—I have the honour to submit my report of the work performed by the Colonization Roads Branch of the Department of Lands and Forests for the fiscal year ending October 31st, 1919.

This report is in tabulated form and gives the details of each work with the expenditure made upon it, and a summary on the final page shows the total amounts of the various classes of work done.

Part of the work was done by direct expenditure of the Government, to the amount of \$273,744.24. The balance was expended by Township Municipalities under Colonization Road By-laws, towards which the Government made grants amounting to \$116,877.30, making a total of \$390,621.54.

A great improvement could be made in the service by the employment of more technically trained men to educate and instruct the rural roadmaker, and to lay out and supervise his work. Many mistakes in road location and construction are due to lack of knowledge and errors of judgment of the local men upon whom we must depend to carry on road work.

All of which is respectfully submitted.

I have the honour to be, Sir,

Your obedient servant,

C. H. FULLERTON,

*Superintendent of Colonization Roads.*

Dated at Toronto, October 31st, 1919.

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SCHEDULE SHOWING AMOUNT OF ROAD CONSTRUCTION UNDER THE COL  
ONTARIO,

NUMBER	NAME AND LOCATION OF WORK	NEW ROAD							DITCHED
		Cleared and Stumped		Graded and Shaped		SURFACED			
		Length, rods	Width, feet	Length, rods	Width, feet	Material	Length, rods	Width, feet	
	NORTH DIVISION.								
1	Aberdeen, Leeburn, con. 3 .....	120	35	160	18	gravel	70	5	.....
2	Aberdeen Additional, lot 3, con. 2 .....								15
3	Aberdeen, McClure & Stewart's Hill .....								125
4	Aberdeen, Miller Valley road .....								
5	Aberdeen Additional, con. 1, lot 5 .....								60
6	Ansonia to Nesterville .....	200	40	320	35				
7	Aubrey Township roads .....	195	45	195	20	gravel	160	5	370
8	Aubrey & Eaton Township roads .....								65
9	Assiginack, Bidwell-Green Bay road .....								
10	Balfour, lots 6-5, con. 5 .....								50
11	Balfour & Morgan, lot 2, con. 5 .....								
12	Balfour Township road .....								
13	Blake & Pardee, lot 8, cons. 1-2 .....								
14	Bright, con. 4 .....								160
15	Bright and Gladstone Twp. road .....								
16	Bright, con. 5, lot 7 .....								
17	Bouchard Road in Plummer Add'l. ....								
18	Bridgland road .....								
19	Broder, Lambi road .....								160
20	Broder, lot 8-10, con. 2 .....	160	66						
21	Broder, 6 in 10, con. 4 .....	160	50	160	15				320
22	Broder, Kelly Lake road .....								480
23	Broder, Long Lake road .....								
24	Broder, lot 6, con. 2 .....								
25	Broder, Cæsar road .....								80
26	Capreol, Con. 2, lots 5-8 .....								1,200
27	Capreol, Con. 4, in 5 .....								190
28	Capreol, 5 in 8, con. 3 .....								640
29	Cartier-Geneva road .....								
30	Chapleau Township road .....								1,600
31	Claghley road .....								20
32	Cobden road .....								
33	Copper Bay location .....								
34	Creighton, lots 7-8, con. 6 .....								
35	Creighton and O'Donnell road .....								640
36	Creighton, lot 5, con. 5 .....	320	25						
37	Creighton, lots 2-3, cons. 5-6 .....								80
38	Cuthbertson, north from C.P.R. ....								
39	Cuthbertson, con. 7, road .....	440	40						
40	Day, Kirkwood road .....								
41	Day, con. 3, lot 4 .....	160	40	90	20				
42	Dawson Road Township roads .....	960	20	160	10	earth	160	10	
43	Dill, McFarlane Lake road .....								480
44	Dill, Leedale road .....	80	60						80
45	Dill, con. 5, lots 7-8 .....								80
46	Dorion Township roads .....	40	24	40	20	earth	40	20	
47	Dowling and Fairbanks Twp. road .....	400	66	400	16				640
48	Dowling, lot 2, con. 2 .....								
49	Dowling, Larchwood road .....								
50	Dowling, Bridge approach .....								20

ONIZATION ROADS BRANCH, DEPARTMENT OF LANDS, FORESTS AND MINES.  
1919.

BRIDGES			CULVERTS		CUT AND FILL		OLD ROAD						MILEAGE	EXPENDITURE		NUMBER
Number	Span	Material	Number	Material	Material	Cubic yards	Side- Brushed	Graded and Shaped	SURFACED							
							Length, rods	Width, feet	Length, rods	Width, feet	Material	Length, rods	Width, feet		\$	c.
...	...	...	2	wood	...	...	...	...	...	...	...	...	...	.50	405 04	1
...	...	...	3	wood	...	...	...	...	75 24	...	gravel	75 5	...	.23	200 85	2
...	...	...	2	wood	...	...	...	...	240 22	...	gravel	125 5	...	.75	299 99	3
...	...	...	...	...	...	...	100 12	...	560 18	...	gravel	480 6	...	1.75	500 59	4
...	...	...	...	...	...	...	...	...	160 20	...	gravel	120 5	...	.50	300 00	5
2	20	wood	1	wood	earth	100	...	...	...	...	...	...	...	1.00	499 99	6
...	...	...	4	wood	...	...	...	...	...	...	...	...	...	1.50	344 25	7
...	...	...	4	wood	cord'roy	220	85 45	...	60 14	...	gravel	70 6	...	2.00	641 50	8
...	...	...	...	...	...	...	...	...	...	...	gravel	280 6	...	.85	400 00	9
1	16	wood	1	wood	...	...	...	...	80 12	...	...	...	...	.25	205 25	10
...	...	...	...	...	...	...	...	...	660 10	...	...	...	...	2.00	500 00	11
...	...	...	3	wood	...	...	...	...	320 16	...	...	...	...	.25	114 00	12
...	...	...	9	wood	...	...	160 20	...	240 18	...	gravel	240 6	...	.75	500 00	13
...	...	...	4	wood	...	...	...	...	480 18	...	gravel	80 5	...	1.50	352 13	14
...	...	...	...	...	...	...	...	...	360 20	...	gravel	160 6	...	1.56	450 84	15
...	...	...	4	wood	...	...	100 14	...	460 22	...	gravel	70 5	...	1.50	351 52	16
...	...	...	2	wood	...	...	100 35	...	140 20	...	gravel	140 5	...	.50	199 99	17
...	...	...	...	...	earth	366	160 16	...	440 24	...	gravel	130 6	...	1.41	804 63	18
...	...	...	3	wood	...	...	...	...	320 16	...	...	...	...	1.00	200 00	19
...	...	...	4	wood	...	...	...	...	...	...	...	...	...	.50	100 00	20
...	...	...	5	wood	...	...	...	...	...	...	...	...	...	.50	200 50	21
...	...	...	2	wood	...	...	...	...	820 9	...	...	...	...	2.50	302 09	22
...	...	...	...	...	...	...	...	...	540 16	...	...	...	...	1.50	150 00	23
...	...	...	2	wood	...	...	...	...	320 16	...	...	...	...	1.00	150 00	24
...	...	...	6	wood	...	...	...	...	720 16	...	...	...	...	2.00	199 87	25
...	...	...	9	wood	...	...	...	...	1,200 18	...	...	...	...	3.75	300 88	26
...	...	...	...	...	...	...	...	...	160 12	...	...	...	...	.50	251 00	27
...	...	...	2	wood	...	...	...	...	320 15	...	...	...	...	1.00	150 50	28
...	...	...	...	...	...	...	...	...	480 12	...	...	...	...	1.50	253 30	29
...	...	...	5	wood	...	...	80 60	...	800 16	...	...	...	...	4.00	2,000 00	30
...	...	...	...	...	...	...	...	...	960 22	...	gravel	90 5 1/2	...	3.00	504 17	31
1	30	wood	...	...	earth	10	...	...	...	...	gravel	135 5	...	0.00	359 16	32
...	...	...	...	...	earth	110	...	...	...	...	...	...	...	.50	250 00	33
1	16	wood	3	wood	...	...	...	...	320 15	...	...	...	...	1.00	203 50	34
1	16	wood	...	...	...	...	...	...	320 11	...	...	...	...	1.00	738 55	35
...	...	...	...	...	...	...	...	...	...	...	...	...	...	1.00	104 50	36
...	...	...	8	wood	...	...	...	...	400 17	...	...	...	...	1.25	290 25	37
...	...	...	...	...	...	...	...	...	...	...	gravel	190 6	...	.59	300 00	38
...	...	...	...	...	...	...	...	...	...	...	...	...	...	1.38	699 75	39
...	...	...	...	...	...	...	...	...	...	...	gravel	170 5	...	.53	349 85	40
...	...	...	5	wood	...	...	...	...	100 20	...	...	...	...	.81	349 76	41
...	...	...	17	wood	...	...	...	...	...	...	...	...	...	3.00	750 00	42
...	...	...	2	wood	...	...	...	...	...	...	stone	240 5	...	.75	249 99	43
1	16	wood	...	...	...	...	...	...	...	...	...	...	...	.25	150 63	44
1	16	wood	3	wood	...	...	240 25	...	...	...	...	...	...	.75	175 00	45
...	...	...	5	wood	...	...	300 15	...	940 24	...	gravel	1,100 6	...	3.56	1,500 00	46
...	...	...	5	wood	...	...	...	...	...	...	...	...	...	1.25	408 55	47
...	...	...	1	wood	...	...	160 25	...	320 16	...	...	...	...	1.00	252 00	48
...	...	...	...	...	...	...	...	...	320 12	...	...	...	...	1.00	100 78	49
...	...	...	1	iron	...	...	...	...	...	...	...	...	...	.6	303 48	50



SCHEDULE SHOWING AMOUNT OF ROAD CONSTRUCTION UNDER THE COL  
ONTARIO, 191

NUMBER	NAME AND LOCATION OF WORK	NEW ROAD						DITCHED	
		Cleared and Stumped		Graded and Shaped		SURFACED			
		Length, rods	Width, feet	Length, rods	Width, feet	Material	Length, rods		Width, feet
	NORTH DIVISION.— <i>Continued.</i>								
51	Dryden, lot 11, con. 5 .....	100	40	160	12	.....	.....	.....	100
52	Dryden, lot 12, con. 6 .....	.....	.....	.....	.....	.....	.....	.....	160
53	Dryden, lots 10-11, con. 6 .....	.....	.....	.....	.....	.....	.....	.....	640
54	Falconbridge and Garson Twp. road .....	.....	.....	.....	.....	.....	.....	.....	.....
55	Fenwick Township road .....	.....	.....	.....	.....	.....	.....	.....	44
56	Galbraith, con. 2, lot 11 .....	.....	.....	.....	.....	.....	.....	.....	.....
57	Galbraith, con. 3, lot 11 .....	.....	.....	.....	.....	.....	.....	.....	40
58	Galbraith, cons. 2-3 .....	109	40	109	24	.....	.....	.....	109
59	Gillies Township roads .....	.....	.....	.....	.....	.....	.....	.....	.....
60	Goldenberg road, east .....	.....	.....	.....	.....	.....	.....	.....	60
61	Gorham Township roads .....	560	40	240	18	gravel	240	6	320
62	Gould, con. 2 .....	400	40	.....	.....	.....	.....	.....	.....
63	Hagar, Appleby and Markstay road ..	.....	.....	.....	.....	.....	.....	.....	.....
64	Hagar, lots 12-13, con. 1 .....	.....	.....	.....	.....	.....	.....	.....	320
65	Hagar, 1 and 6 in 4-5 .....	.....	.....	.....	.....	.....	.....	.....	480
66	Hagar-Awrey road .....	.....	.....	.....	.....	.....	.....	.....	.....
67	Hagar, lots 13-14, cons. 1-2 .....	.....	.....	.....	.....	.....	.....	.....	240
68	Hagar, Loughrin road .....	.....	.....	.....	.....	.....	.....	.....	180
69	Hagar, McGillis road .....	.....	.....	.....	.....	.....	.....	.....	.....
70	Hagar, lots 8-9, con. 5 .....	.....	.....	.....	.....	.....	.....	.....	160
71	Hagar, lots 10-11, con. 5 .....	.....	.....	.....	.....	.....	.....	.....	100
72	Hagar, lots 13-14, cons. 2-3 .....	.....	.....	.....	.....	.....	.....	.....	160
73	Hagar, lots 11-12, cons. 1-2 .....	320	35	.....	.....	.....	.....	.....	.....
74	Hagar-Awrey road .....	80	50	160	16	.....	.....	.....	.....
75	Hagar, Nepowassan road .....	.....	.....	.....	.....	.....	.....	.....	320
76	Hagar, North Finlans Corners .....	.....	.....	.....	.....	.....	.....	.....	.....
77	Hallam, con. 1, lots 7-8 .....	160	40	.....	.....	.....	.....	.....	.....
78	Hallam, con. 1, lots 4-6 .....	.....	.....	.....	.....	.....	.....	.....	.....
79	Hallam, Mackay & Lee Valley road..	.....	.....	.....	.....	.....	.....	.....	20
80	Hallam, Lee Valley road .....	300	601	120	18	.....	.....	.....	.....
81	Hallam, con. 5 .....	.....	.....	.....	.....	.....	.....	.....	.....
82	Hallam, Birch Lake road .....	.....	.....	.....	.....	.....	.....	.....	40
83	Hanmer, lots 7-8, con. 5 .....	80	25	114	10	.....	.....	.....	.....
84	Hilton, Canoe Point road .....	320	30	.....	.....	.....	.....	.....	.....
85	Ignace Township roads .....	.....	.....	.....	.....	.....	.....	.....	.....
86	Iron Bridge and Bellingham road ..	.....	.....	.....	.....	.....	.....	.....	.....
87	Jocelyn, P. line road .....	.....	.....	.....	.....	.....	.....	.....	.....
88	Johnson, from Rathwell's corner ..	70	45	.....	.....	.....	.....	.....	.....
89	Johnson, Desbarats south road .....	.....	.....	.....	.....	.....	.....	.....	100
90	Kirkwood, con. 3, lot 4 .....	.....	.....	.....	.....	.....	.....	.....	.....
91	Korah Township roads (hill) .....	.....	.....	.....	.....	.....	.....	.....	.....
92	Laird-McDonald C.P.R. crossing .....	.....	.....	.....	.....	.....	.....	.....	.....
93	Laird, secs. 20-29 .....	160	40	.....	.....	gravel	100	5	.....
94	Laird, bet. P.O. and Government road	.....	.....	.....	.....	.....	.....	.....	.....
95	Laird, secs. 8-9, and 16-17 .....	200	30	.....	.....	.....	.....	.....	.....
96	Laird, secs. 3-10 .....	.....	.....	.....	.....	.....	.....	.....	.....
97	Lefroy, Main road, lot 15 .....	.....	.....	.....	.....	.....	.....	.....	.....
98	Lefroy, Hopper Main road .....	.....	.....	.....	.....	.....	.....	.....	.....
99	Lumsden, con. 2 .....	80	15	80	15	.....	.....	.....	.....
100	Lumsden, lot 1, con. 4 .....	.....	.....	.....	.....	.....	.....	.....	.....

ONIZATION ROADS BRANCH, DEPARTMENT OF LANDS, FORESTS AND MINES,  
9.—Continued.

BRIDGES			CULVERTS		CUT AND FILL		OLD ROAD						MILEAGE	EXPENDITURE		NUMBER	
Number	Span	Material	Number	Material	Material	Cubic yards	Side- Brushed		Graded and Shaped		SURFACED						
							Length, rods	Width, feet	Length, rods	Width, feet	Material	Length, rods	Width, feet		\$	c.	
2	16	wood	8	wood					10	12				1.00	259	00	51
			1	wood										.25	199	70	52
			2	wood	earth	480			480	10				1.50	152	62	53
1		cedar			rock	176			80	16				.25	198	76	54
					earth	500			44	8	gravel	59	6	.50	449	50	55
					earth	30					gravel	40	5	.12	200	00	56
									80	20	gravel	80	6	.31	300	00	57
			2	wood										.34	301	00	58
			7	wood	earth	78	400	10	480	18	gravel	680	6	2.12	1,000	00	59
			3	cedar			800	12	320	18	gravel	155	5	2.50	600	00	60
2	16	wood	30	wood	cor'ry	55			1,120	24	gravel	3,040	6	10.25	2,500	00	61
			2	wood										1.25	505	25	62
			2	wood					160	12				.50	155	17	63
									160	14				.50	102	25	64
1	16	wood							480	15				1.50	200	50	65
									160	12				.50	250	00	66
			4	wood					320	12				1.00	102	00	67
			3	wood			150	10	180	15				.50	111	00	68
			5	wood					320	16				1.00	200	00	69
			4	wood					240	18				.75	99.91	70	70
									160	15				.50	150	00	71
			2	wood					80	9				.25	101	00	72
														1.00	100	00	73
			2	wood			80	50						.75	200	53	74
			4	wood	cor'ry				160	9				.50	90	00	75
									160	16				.50	200	00	76
									160	24				1.00	300	00	77
									90	20	gravel	82	5	.28	239	72	78
			2	wood	earth	800			160	24				.75	300	00	79
			2	pipe										.94	989	90	80
			2	wood			160	12	640	16	gravel	10	6	2.00	302	25	81
			3	wood					620	18	gravel	160	6	2.00	799	45	82
														.35	150	50	83
			1	wood										1.00	252	50	84
			2	wood	cor'ry	500	300	45			gravel	600	9	3.00	442	74	85
			2	wood	earth	130			320	20	gravel	480	7	2.00	708	34	86
					earth	150					gravel	80	5½	.25	250	00	87
					earth	150	70	24			gravel	110	5½	.65	400	00	88
											gravel	200	5	.62	300	00	89
							310	20	610	20				1.88	300	00	90
			3	cedar	earth	4,100								.12	2,175	00	91
					earth	55			8	20	gravel	75	5	.22	200	00	92
			1	wood	earth	200								.50	400	00	93
											gravel	150	5	.47	400	00	94
					earth	200			60	18	gravel	30	6	.94	300	00	95
											gravel	110	5	.34	275	00	96
									120	22	gravel	175	6	.54	297	81	97
											gravel	100	5½	.31	300	00	98
					cor'ry	440								.25	101	50	99
									480	9				1.50	151	08	100

SCHEDULE SHOWING AMOUNT OF ROAD CONSTRUCTION UNDER THE COL  
ONTARIO, 191

NUMBER	NAME AND LOCATION OF WORK	NEW ROAD							DITCHED
		Cleared and Stumped		Graded and Shaped		SURFACED			
		Length, rods	Width, feet	Length, rods	Width, feet	Material	Length, rods	Width, feet	Length, rods
	NORTH DIVISION.— <i>Continued.</i>								
101	Lybster Township roads							268	
102	Marks Township roads	280	25	80	18	gravel	80	6	85
103	May, from Main road south								
104	May, Massey-Lee Valley, lot 7								
105	May, Spanish River bridge, con. 1								
106	May, lots 9-10, con. 1								
107	May, cons. 3-4, lots 9-10							160	
108	May, Massey-Birch Lake, con. 3								
109	McDonald, sec. 20-21								
110	McDonald, from sec. 16							100	
111	McDonald, sec. 1 on T. L.	320	40						
112	McDonald, sec. 26-27								
113	McDonald, Saunder's Hill, sec. 16	80	40	87	24	gravel	30	5	
114	McKim Township road, con. 5								
115	McKim, Sudbury-Copper Cliff road								
116	McKinnon, con. 5, lot 9	206	35	32	18				
117	Mellick Township road							66	
118	Meredith, secs. 29-30								
119	Meredith, sec. 28, Sault road								
120	Michipicoten Township roads							10	
121	Morgan, con. 1, lots 5-6							160	
122	Morgan, lots 10-11, con. 1	no work.							
123	Nairn to Spanish River road							28	
124	Nipigon Township roads	320	40			gravel	320	7	
125	Oliver Township roads								
126	Patton, con. 3, to Trunk road							70	
127	Patton and Gladstone T. L. road							160	
128	Patton and Gladstone from McLaugh- lins								
129	Pearson Township road	1,280	40	40	24	gravel	40	7	
130	Plummer, Northern road	30	50	80	21	gravel	30	6	
131	Plummer, con. 6, lot 12							8	
132	Plummer, from Gilroy's hill							160	
133	Plummer Additional road							9	
134	Plummer, from con. 3, lot 2								
135	Plummer, con. 3								
136	Plummer Additional, from con. 3								
137	Point Aux Pins road								
138	Pellatt Township roads	480	40					125	
139	Rose, Maguire road							25	
140	Salter, from lot 20	320	40	160	20				
141	Scoble Township road, west								
142	Scoble Township road, east	120	40	40	18	gravel	40	5	
143	Shakespeare, Centre line road								
144	Shedden, Spanish and Walford road								
145	Shedden, south from Spanish								
146	Stirling Township roads	105	40	105	24	earth	105	5	
147	St. Joseph, F. & G. line							310	
148	St. Joseph, B. line								
149	Strange Township roads							140	
150	Striker, Jensen road								

ONIZATION ROADS BRANCH, DEPARTMENT OF LANDS, FORESTS AND MINES,  
9.—Continued.

BRIDGES			CULVERTS		CUT AND FILL		OLD ROAD						MILEAGE	EXPENDITURE	NUMBER	
Number	Span	Material	Number	Material	Material	Cubic yards	Side- Brushed	Graded and Shaped	SURFACED							
							Length, rods	Width, feet	Length, rods	Width, feet	Material	Length, rods	Width, feet			
1	r.	plank	10	wood	.....	.....	120	10	1,560	18	gravel	1,600	6	5.00	\$ 999 45	101
.....	.....	.....	8	wood	earth	310	300	24	760	18	gravel	780	6	3.25	999 96	102
.....	.....	.....	2	wood	.....	.....	70	12	307	18	.....	.....	.....	1.00	252 00	103
.....	.....	.....	.....	.....	.....	.....	.....	.....	10	20	gravel	167	5½	.52	302 00	104
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	gravel	204	5	.75	350 00	105
.....	.....	.....	.....	.....	earth	55	.....	.....	.....	.....	gravel	290	5	1.00	301 06	106
.....	.....	.....	2	wood	.....	.....	.....	.....	160	17	gravel	160	5	1.00	404 05	107
.....	.....	.....	.....	.....	earth	175	.....	.....	140	20	gravel	140	5	.50	300 00	108
.....	.....	.....	1	wood	.....	.....	.....	.....	.....	.....	gravel	72	5	.22	200 00	109
.....	.....	.....	1	wood	.....	.....	.....	.....	.....	.....	gravel	100	5½	.50	299 95	110
.....	.....	.....	3	wood	earth	500	.....	.....	.....	.....	.....	.....	.....	1.00	399.91	111
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	gravel	160	5½	.50	397 65	112
.....	.....	.....	1	wood	earth	1,600	.....	.....	.....	.....	.....	.....	.....	.28	400 00	113
.....	.....	.....	.....	.....	.....	.....	.....	.....	640	20	.....	.....	.....	2.00	200 00	114
.....	.....	.....	.....	.....	stone	660	.....	.....	.....	.....	.....	.....	.....	.11	1,343 20	115
.....	.....	.....	3	wood	.....	.....	.....	.....	.....	.....	.....	.....	.....	.64	399 40	116
.....	.....	.....	3	stone	earth	32	.....	.....	45	18	gravel	45	5	.32	590 59	117
.....	.....	.....	.....	.....	earth	80	.....	.....	480	22	gravel	110	5	1.50	301 00	118
.....	.....	.....	1	wood	.....	.....	.....	.....	160	24	gravel	120	5	.50	202 25	119
28	16	wood	19	wood	earth	79	2,201	6	17	12	gravel	284	6	7.00	2,175 00	120
1	r.	wood	1	wood	cord'y	175	160	40	240	16	.....	.....	.....	1.00	200 50	121
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	175 00	122
.....	.....	.....	4	cedar	.....	.....	300	10	408	18	gravel	148	7	1.27	978 11	123
.....	.....	.....	4	wood	.....	.....	1,120	15	.....	.....	gravel	967	5	5.00	1,001 20	124
.....	.....	.....	2	wood	.....	.....	320	10	160	21	gravel	320	6	1.00	499 99	125
.....	.....	.....	.....	.....	earth	100	100	14	240	22	gravel	60	5	1.50	486 16	126
.....	.....	.....	.....	.....	.....	.....	160	40	160	20	gravel	160	5½	.50	349 12	127
.....	.....	.....	.....	.....	.....	.....	.....	.....	70	24	gravel	257	5½	1.00	451 35	128
.....	.....	.....	17	wood	earth	20	.....	.....	720	20	gravel	720	5	6.25	999 25	129
.....	.....	.....	.....	.....	earth	200	.....	.....	.....	.....	.....	.....	.....	.34	350 00	130
.....	.....	.....	2	wood	.....	.....	240	20	100	24	gravel	100	5	.75	301 25	131
.....	.....	.....	1	wood	.....	.....	.....	.....	15	22	gravel	108	5	.41	248 00	132
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	gravel	110	5	.34	300 00	133
.....	.....	.....	.....	.....	earth	20	2	.....	240	22	gravel	240	5	.25	365 75	134
.....	.....	.....	1	wood	.....	.....	.....	.....	60	18	gravel	180	5	.75	248 70	135
.....	.....	.....	.....	.....	.....	.....	400	40	.....	.....	.....	.....	.....	1.25	345 37	136
.....	.....	.....	.....	.....	.....	.....	.....	.....	720	18	gravel	1,329	6	4.75	3,775 86	137
2	18	wood	4	wood	stone	187	480	20	1,780	15	gravel	1,368	10	10.00	1,395 36	138
.....	.....	.....	.....	.....	.....	.....	.....	.....	480	22	gravel	160	5	1.50	299 90	139
.....	.....	.....	4	wood	earth	50	.....	.....	.....	.....	.....	.....	.....	1.00	300 00	140
.....	.....	.....	12	wood	.....	.....	800	10	800	18	earth	800	6	4.00	505 55	141
.....	.....	.....	3	wood	.....	.....	140	20	160	18	gravel	160	6	.88	500 00	142
.....	.....	.....	2	wood	earth	1,200	.....	.....	240	20	gravel	80	5	1.00	375 00	143
.....	.....	.....	2	wood	.....	.....	.....	.....	80	18	gravel	90	6	.28	199 95	144
.....	.....	.....	.....	.....	.....	.....	.....	.....	160	18	gravel	140	5	.50	202 25	145
.....	.....	.....	2	wood	.....	.....	106	40	106	24	gravel	106	5	.65	649 70	146
.....	.....	.....	1	wood	earth	170	.....	.....	.....	.....	gravel	90	5	.28	199 52	147
.....	.....	.....	2	wood	.....	.....	40	30	120	30	gravel	50	5	.75	201 50	148
1	re paired	.....	17	wood	earth	362	.....	.....	400	24	gravel	400	5	2.00	749 99	149
.....	.....	.....	6	wood	.....	.....	320	25	320	18	gravel	90	5	2.00	558 15	150



SCHEDULE SHOWING AMOUNT OF ROAD CONSTRUCTION UNDER THE COL  
ONTARIO, 191

NUMBER	NAME AND LOCATION OF WORK	NEW ROAD							DITCHED	
		Cleared and Stumped		Graded and Shaped		SURFACED				
		Length, rods	Width, feet	Length, rods	Width, feet	Material	Length, rods	Width, feet		Length, rods
NORTH DIVISION.—Continued.										
151	Striker, Dazzy bridge, con. 1									
152	Striker, con. 2	90	40	90	18	gravel	90			70
153	Striker, Ritchie's hill									110
154	Tarbutt, cons. 2-3	100	40							
155	Tarbutt, con. 5	160	30	480	24	gravel	35	6		
156	Tarbutt, Maclellan & Pt. Finlay road									160
157	Tarbutt, Maclellan & Pt. Finlay road									
158	Tarbutt & Laird T. L.									
159	Tarentorous, Heyden road	290	40	290	10	gravel	40	6		
160	Thessalon, along Lake Sore	640	40							
161	Thompson, Draper road									7
162	Van Horne Township roads	320	40	320	20	gravel	25	6		1,700
163	Vankoughnet Township roads	365	36	336	20	gravel	11	6		
164	Victoria, Brown Lake to Cedar Lake									60
165	Victoria, secs. 23-21									
166	Ware Township roads, east	320	40							
167	Ware Township road, west	640	40	40	16					640
168	Mond and Fairbank Lake road									320
Total		12,660		5,751			1,616			15,779

ONIZATION ROADS BRANCH, DEPARTMENT OF LANDS, FORESTS AND MINES,  
9.—*Concluded.*

BRIDGES			CULVERTS		CUT AND FILL		OLD ROAD						MILEAGE	EXPENDITURE	NUMBER	
Number	Span	Material	Number	Material	Material	Cubic yards	Side- Brushed		Graded and Shaped		SURFACED					
							Length, rods	Width, feet	Length, rods	Width, feet	Material	Length, rods				Width, feet
...	...	...	...	...	earth	400	160	14	120	20	gravel	160	5½	1.00	\$.	c.
...	...	...	...	...	earth	838	...	...	40	24	gravel	40	6	.31	399 00	151
...	...	...	1	wood	earth	300	...	...	85	20	...	...	...	.25	349 44	152
...	...	...	...	...	...	...	...	...	...	...	gravel	240	5	.57	358 93	153
...	...	...	...	...	...	...	...	...	...	...	gravel	190	5½	1.50	304 70	154
...	...	...	...	...	earth	90	...	...	77	24	gravel	147	7	.75	312 15	155
...	...	...	3	cedar	rock	333	...	...	...	...	...	...	...	.59	274 55	156
1	12	cedar	...	...	...	...	...	...	...	...	...	...	...	.50	514 59	157
1	15	wood	7	wood	earth	729	40	12	55	22	gravel	150	6	.91	299 98	158
1	16	wood	15	wood	earth	862	55	40	560	20	gravel	440	6	2.00	829 36	159
...	...	...	...	...	earth	973	40	20	...	...	gravel	40	7	2.00	310 49	160
...	...	...	2	wood	...	...	...	...	320	18	gravel	80	5	.75	697 67	161
...	...	...	4	wood	stone	500	...	...	320	20	gravel	200	5½	4.25	1,482 90	162
1	16	wood	7	wood	earth	75	...	...	...	...	gravel	640	6	1.00	400 62	164
...	...	...	...	...	...	...	...	...	...	...	gravel	640	7	3.00	400 50	165
...	...	...	...	...	...	...	...	...	160	16	...	...	...	4.00	1,550 00	166
...	...	...	...	...	...	...	...	...	...	...	...	...	...	1.00	1,555 83	167
...	...	...	...	...	...	...	...	...	...	...	...	...	...	1.00	297 58	168
51	...	...	409	.....	.....	20, 113	11337	..	35,962	..	.....	25,772	..	216.95	78300 85	

## SCHEDULE SHOWING THE AMOUNT OF ROAD CONSTRUCTION,

NUMBER	TOWNSHIP	CLEARED AND STUMPED		GRADED		SURFACED		
		Length, rods	Width, feet	Length, rods	Width, feet	Material	Length, rods	Width, feet
NORTH DIVISION.								
1	Alberton, By-law No. "H" .....	100	66	404	28	gravel	715	5
2	Assiginack By-law No. 414 .....			28	24	gravel	1,677	5
3	Atwood By-law No. 102 .....	290	28	567	24	.....	.....	.....
4	Balfour By-law No. 59 .....			2,240	16	.....	.....	.....
5	Blezard By-law No. 105 .....			2,880	24	.....	.....	.....
6	Blue By-law No. 43 .....	208	28	242	28	gravel	100	5
7	Billings By-law No. 247 .....			120	20	gravel	113	7
8	Burpee By-law No. 90 .....			668	18	gravel	177	5
9	Carnarvon By-law No. 323 .....			400	18	gravel	260	7
10	Chapple By-law No. 247 .....	250	66	725	26	gravel	2,351	5
11	Conmee By-law No. 40 .....	920	30	860	20	gravel	860	8
12	Dilke By-law No. 88 .....			540	28	gravel	193	5
13	Drury, Denison & Graham, By-law No. 180 .....	960	25	8,640	12	.....	.....	.....
14	Emo By-law No. 230 .....	690	20	567	24	gravel	2,421	5
15	Gordon By-law No. 157 .....			2,130	12	gravel	934	6
16	Hilton By-law No. 399 .....	160	14	593	22	gravel	716	7
17	Howland By-law No. 148 .....			24	20	gravel	381	6
18	Jaffray & Mellick By-law No. 99 ....	2,136	30	5,071	18	gravel	4,056	8
19	Jocelyn By-law No. 297 .....	60	20	.....	.....	gravel	395	5
20	Johnson By-law No. 95 .....	167	14	227	20	gravel	69	6
21	Korah By-law No. 179 .....	365	66	4,427	24	gravel	3,370	7
22	Laird By-law No. 126 .....			310	24	gravel	537	6
23	Lavalle By-law No. 192 .....	731	66	420	24	gravel	1,602	6
24	McDonald, Meredith and Aberdeen Additional By-law No. 143 .....			1,060	20	gravel	780	7
25	McIrvine By-law No. 220 .....			.....	.....	gravel	360	5
26	Morley and Patullo By-law No. 183..	111	33	653	28	gravel	1,272	5
27	Neebing By-law No. 377 .....	840	40	1,000	20	gravel	400	5
28	O'Connor By-law No. 158 .....	800	40	1,320	18	earth	1,480	18
29	Oliver By-law No. 183 .....	1,440	10	1,440	18	gravel	2,240	7
30	Paipoonge By-law No. 164 .....	80	66	2,060	18	gravel	2,700	7
31	Plummer Additional By-law No. 163 ..			3,020	12	gravel	871	6
32	Prince By-law No. 74 .....	320	10	450	24	gravel	200	6
33	Rayside By-law No. 216 .....	320	60	1,120	18	.....	.....	.....
34	Sanfield By-law No. 241 .....			12	18	gravel	263	7
35	Shuniah By-law No. 448 .....			4,300	18	gravel	5,240	8
36	St. Joseph By-law No. 433 .....			210	18	gravel	889	6
37	Tarentorus By-law No. 188 .....	200	20	56	33	gravel	1,253	9
38	Thessalon By-law No. 12 .....			580	20	gravel	480	5
39	Thompson By-law No. 114 .....			100	20	gravel	70	5
40	Worthington By-law No. 91 .....	260	20	320	28	gravel	210	5
Total .....		11,308	.....	49,784	.....	.....	39,635	.....

## COLONIZATION ROADS BRANCH, UNDER MUNICIPAL BY-LAWS, 1919.

DITCHED			CUT OR FILL			BRIDGES			CULVERTS		NEW ROAD MILEAGE	OLD ROAD MILEAGE	GOVERNMENT EXPENDITURE	NUMBER
Length, rods	Material	Amount in cu. yds.	Number	Span, feet	Material	Number	Material							
46	clay....	300	.....	.....	.....	4	cedar...	.31	3.25		\$	c.		1
40	clay....	120	.....	.....	.....	2	cedar....	.....	6.00				1,000 00	2
.....	clay....	50	.....	.....	.....	1	cedar....	1.50	.50				573 77	3
2,880	.....	.....	.....	.....	.....	8	wood....	.....	9.00				1,500 00	4
4,320	.....	.....	.....	.....	.....	19	wood....	.....	9.00				500 00	5
30	.....	.....	.....	.....	.....	.....	.....	1.25	.31				625 00	6
.....	earth...	76	1R	18	wood.	4	rock....	.....	1.00				350 00	7
.....	stone...	260	.....	.....	.....	.....	.....	.....	3.00				175 00	8
.....	.....	.....	.....	.....	.....	7	cedar....	.....	2.00				450 00	9
160	earth...	130	4	16	wood.	17	cedar...	1.25	9.00				4,500 00	10
498	earth...	600	.....	.....	.....	23	wood....	3.00	1.00				1,000 00	11
.....	earth...	300	.....	.....	.....	5	cedar...	2.00	2.00				500 00	12
1,920	.....	.....	.....	.....	.....	9	wood....	3.00	24.00				2,500 00	13
70	earth...	300	.....	.....	.....	7	cedar...	.75	8.50				2,919 56	14
.....	stone...	70	.....	.....	.....	11	cedar....	.....	11.00				825 00	15
.....	.....	.....	.....	.....	.....	.....	.....	.....	2.50				600 00	16
110	earth...	466	1	16	wood.	8	cedar....	.....	1.50				675 00	17
4,115	.....	.....	7	18	wood.	38	wood....	.50	21.00				1,623 02	18
620	earth...	230	.....	.....	.....	2	wood....	.....	1.50				600 00	19
119	rock....	70	.....	.....	.....	.....	.....	.....	1.00				300 00	20
809	earth...	2,386	.....	.....	.....	9	wood....	1.00	25.00				3,613 52	21
.....	earth...	40	.....	.....	.....	.....	.....	.....	2.00				400 00	22
25	earth...	50	.....	.....	.....	2	wood....	2.50	6.00				1,996 99	23
272	earth...	300	.....	.....	.....	.....	.....	.....	4.00				600 00	24
.....	.....	.....	.....	.....	.....	.....	.....	.....	1.15				500 00	25
228	earth...	890	.....	.....	.....	7	metal...	.....	5.00				1,991 37	26
1,200	earth...	300	1	14	wood.	10	wood....	2.25	3.00				3,163 97	27
.....	.....	.....	2	18	wood.	11	wood....	1.50	4.12				1,000 00	28
240	.....	.....	1	16	wood.	20	wood....	.....	9.50				1,600 00	29
1,280	earth...	200	.....	.....	.....	15	wood....	.25	9.00				3,064 97	30
.....	.....	.....	.....	.....	.....	6	wood....	.....	11.75				775 00	31
100	earth...	50	.....	.....	.....	11	wood....	.....	6.50				300 00	32
880	.....	.....	.....	.....	.....	5	wood....	.....	3.50				600 00	33
18	.....	.....	.....	.....	.....	5	wood....	.....	.90				200 00	34
720	earth...	100	6	18	wood.	30	wood....	.....	27.00				3,750 00	35
37	.....	.....	.....	.....	.....	5	wood....	.....	3.00				1,200 00	36
800	earth...	644	.....	.....	.....	42	metal...	.....	11.00				2,500 00	37
.....	.....	.....	.....	.....	.....	.....	.....	.....	2.00				300 00	38
.....	earth...	125	.....	.....	.....	.....	.....	.....	.40				150 00	39
8	.....	.....	.....	.....	.....	1	cedar...	.....	1.25				575 00	40
21,575	.....	8,057	23	.....	.....	344	.....	19.06	253.13				50,397 02	.....



SCHEDULE SHOWING THE AMOUNT OF ROAD CONSTRUCTION UNDER THE  
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NUMBER	NAME AND LOCATION OF WORK	NEW ROAD							DITCHED
		Cleared and Stumped		Graded and Shaped		SURFACED			
		Length, rods	Width, feet	Length, rods	Width, feet	Material	Length, rods	Width, feet	
	WEST DIVISION.								
1	Albemarle, 20th sideroad .....								
2	Albemarle, west road .....								
3	Amabel, lot 20, con. 4 .....								
4	Armour, lot 24, con. 14 .....								
5	Armour, lot 5, con. 5 .....								240
6	Baysville and Bracebridge main road .....	280	66	280	18	gravel	280	8	1,360
7	Bethune, con. 6, lot 8-15 .....	320	20	160	18				3
8	Bethune, lots 7-10, con. 8 .....								
9	Brunel, Huntsville-Baysville road .....								
10	Cardwell, 25th sideroad .....								
11	Carling, con. 9, N.W. road .....	640	36						
12	Carling, 10th con. to Snug Harbour ..								
13	Carling, Nobel road, lots 7-16 .....	160	25	50	16	gravel	50	5	
14	Chaffey, east road to Huntsville ....	160	30	160	16	gravel	160	6	
15	Chaffey, Huntsville-Ravinscliffe .....								
16	Chapman and Lount T. L. road .....			160	14	gravel	160	7	
17	Chapman, Bullocks Hill road .....								
18	Chapman, 10th sideroad .....	80	40	80	18	gravel	80	6	
19	Christie Township roads .....								
20	Draper, new road from Oakley .....								
21	Draper-Muskoka townline .....								
22	Eastnor, 15th sideroad, cons. 1-2 .....								
23	Eastnor, cons. 2-3, lot 11 .....								
24	Gurd and Patterson road .....								
25	Ferguson, McKellar Village road .....								
26	Foley, Blackstone road .....								
27	Foley, Christie road from P.S. road ..								
28	Foley, Christie road .....								
29	Franklin, Big Peninsula road .....								
30	Franklin and Sinclair, Bobcaygeon ..								
31	Freeman, Footes Bay to Mactier ....	160	30	160	18	earth	160	14	
32	Hagerman, Nipissing-Dunchurch road ..								
33	Himsworth, N., con. 24 .....								
34	Himsworth, N., 20th sideroad .....	240	40	160	16	gravel	160	2	
35	Himsworth, N., con. 22 .....	160	20	160	20	gravel	160	6	
36	Himsworth, S., 5th sideroad .....								
37	Himsworth, S., con. 4, lots 8-9 .....								
38	Humphrey, Parry Sound road .....								
39	Humphrey, Peninsula road .....								
40	Lindsay, Bury road .....								
41	Lindsay, cons. 2-3, from S. Bd. ....								
42	Lount, Distress River road .....								
43	Machar, 20th sideroad .....								
44	Machar, lots 8-20, cons. 8-9 .....								
45	Machar, North road to Gurd, con. 10 ..								
46	Machar and Gurd, lots 25-26 .....								
47	Machar and Strong, T. L. ....								
48	Matchedash, Station road, con. 2 .....								
49	Matchedash sideroad, cons. 1-2 .....								
50	McDougall, N.W. road .....	320	40	320	20				



SCHEDULE SHOWING AMOUNT OF ROAD CONSTRUCTION UNDER THE COL  
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NUMBER	NAME AND LOCATION OF WORK	NEW ROAD						DITCHED	
		Cleared and Stumped		Graded and Shaped		SURFACED			
		Length, rods	Width, feet	Length, rods	Width, feet	Material	Length, rods		Width, feet
	WEST DIVISION.—Continued.								
51	McKenzie, lot 35, con. 1								
52	McMurrich and Ryerson road								
53	McMurrich, Beggsboro Creek road								
54	McLean, Lake Shore road								
55	Medonte, lot 11, con. 11								
56	Medonte, lot 20, con. 12								
57	Medonte, lot 21, con. 12								
58	Medonte, con. 1, lot 55	40	20	40	20				
59	Medonte, sideroad 10-11, con. 12	60	24	106	24				
60	Medora, Ferndale road								
61	Medora, Peninsula road								
62	Medora and Wood, Long Point road	(no report)							
63	Mills, con. 12, lot 11			160	16	gravel	160	8	
64	Mills, lots 22-28, con. 8	120	35	80	20	gravel	120	6	
65	Mills, 30th sideroad								
66	Monteith, Axe Lake road								
67	Morrison Township roads								
68	Muskoka, Musquosh road								
69	Nipissing, 5th sideroad	780	40	320	18				
70	Nipissing, cons. 10-14								
71	Nipissing and Rosseau road								
72	North Orillia sideroad 15-16								
73	North Orillia, Boyd road								
74	Oakley, Mud Lake road								
75	Orillia, Muskoka road								
76	Orillia, Rama road								
77	Oro, lots 21-22, con. 11								8
78	Patterson, North side Restoule L.								
79	Patterson, West bd. lot 24								
80	Pringle and Gurd, T.L.								
81	Pringle and Mills, 5th sideroad			160	14	gravel	160	7	
82	Ridout, Baysville road								
83	Ryde Township roads								
84	Ryde Township road, con. 10								
85	Ryerson, lots, 1-10, con. 12								
86	South Orillia road, cons. 1-2								
87	Spence, Sudgen road								
88	Stephenson, Utterson road								
89	St. Edmunds, Bury road								
90	Stisted, sideroad 15-16								
91	Strong, con. 13, lot 14	330	40						
92	Strong, 10th sideroad, con. 7	80	30	160	16				
93	Strong, cons. 13-14								
94	Sunnisdale Township roads								
95	Tay, lot 8, con. 4								
96	Tay, Victoria Harbour road								
97	Tay, Port Severn road								
98	Tay, con. 4 to C.P.R.								
	Total	3,930		2,716			1650		1,611

ONIZATION ROADS BRANCH, DEPARTMENT OF LANDS, FORESTS AND MINES,  
O, 1919.

BRIDGES			CULVERTS		CUT AND FILL		OLD ROAD						MILEAGE	EXPENDITURE	NUMBER		
Number	Span	Material	Number	Material	Material	Cubic yards	Length, rods	Width, feet	Length, rods	Width, feet	Material	Length, rods				Width, feet	
..	..	..	5	cedar	..	..	..	..	240	12	gravel	240	12	.75	\$ 300 00	51	
..	..	..	..	..	stone	234	..	..	640	16	gravel	640	8	2.00	305 75	52	
..	..	..	..	..	..	..	..	..	320	18	gravel	100	5	.00	300 00	53	
..	..	..	..	..	earth	400	..	..	140	18	gravel	45	7	1.50	205 20	54	
..	..	..	..	..	..	..	..	..	40	18	..	..	..	.44	100 00	55	
..	..	..	..	..	..	..	..	..	44	20	gravel	44	8	.12	100 00	56	
..	..	..	..	..	..	..	..	..	..	..	..	..	..	.14	200 00	57	
..	..	..	1	iron	..	..	..	..	..	..	gravel	90	7	.12	100 00	58	
..	..	..	4	wood	..	..	..	300	50	240	18	gravel	240	7	.52	250 00	59
..	..	..	..	..	..	..	..	600	50	200	18	gravel	200	5	1.75	400 00	60
..	..	..	..	..	..	..	..	..	..	..	..	..	..	2.00	500 00	61	
..	..	..	..	..	..	..	..	..	..	..	..	..	..	.00	450 00	62	
..	..	..	..	..	..	..	..	..	..	..	..	..	..	.50	286 38	63	
..	..	..	2	cedar	..	..	..	..	..	..	..	..	..	.38	200 00	64	
..	..	..	2	cedar	..	..	..	..	160	12	gravel	160	8	.50	300 00	65	
..	..	..	4	wood	..	..	640	20	80	8	gravel	80	12	2.00	300 00	66	
..	..	..	..	..	..	..	..	..	480	20	gravel	200	5	1.50	300 00	67	
1	16	cedar	1	cedar	..	..	..	..	1,200	18	gravel	400	5	4.00	503 33	68	
..	..	..	5	cedar	..	..	..	..	..	..	..	..	..	2.50	513 75	69	
..	..	..	2	cedar	..	..	..	..	320	16	gravel	320	8	1.00	305 78	70	
..	..	..	2	cedar	..	..	..	..	160	16	gravel	160	6	.50	199 00	71	
..	..	..	2	tile	..	..	..	..	..	..	gravel	190	6	.59	300 00	72	
..	..	..	..	..	..	..	60	30	60	24	..	..	..	.18	175 00	73	
..	..	..	..	..	..	..	200	50	160	18	gravel	100	5	1.50	200 00	74	
..	..	..	..	..	..	..	..	..	..	..	gravel	130	7	.41	280 00	75	
..	..	..	..	..	..	..	..	..	..	..	stone	56	7	.16	250 00	76	
..	..	..	..	..	..	..	..	..	440	22	gravel	70	7	1.38	207 60	77	
..	..	..	2	cedar	..	..	..	..	150	14	gravel	150	7	.47	250 75	78	
..	..	..	6	wood	..	..	..	..	160	16	gravel	160	6	.50	299 43	79	
..	..	..	7	cedar	..	..	..	..	240	16	gravel	240	6	.75	300 71	80	
1	16	cedar	1	cedar	..	..	..	..	..	..	..	..	..	.50	300 00	81	
..	..	..	..	..	..	..	200	40	320	16	gravel	200	5	1.50	300 00	82	
..	..	..	2	wood	stone	5	10	..	250	18	gravel	250	5	2.00	300 00	83	
..	..	..	3	stone	..	..	100	40	600	18	gravel	400	12	2.00	200 00	84	
..	..	..	6	cedar	..	..	160	16	320	16	gravel	320	6	1.00	300 00	85	
..	..	..	..	..	earth	160	..	..	72	20	gravel	84	7	.26	198 00	86	
..	..	..	..	..	..	..	..	..	240	14	gravel	240	6	.75	399 92	87	
..	..	..	6	iron	..	..	1,000	50	1,200	20	gravel	1,200	6	4.50	355 26	88	
..	..	..	2	wood	stone	40	..	..	..	..	gravel	130	7	.41	250 00	89	
..	..	..	..	..	..	..	160	30	160	16	gravel	160	5	.50	399 28	90	
..	..	..	3	cedar	..	..	..	..	..	..	..	..	..	1.03	300 00	91	
..	..	..	2	cedar	..	..	..	..	..	..	..	..	..	.50	256 50	92	
..	..	..	..	..	earth	225	..	..	..	..	..	..	..	.00	303 00	93	
..	..	..	1	iron	..	..	..	..	960	24	gravel	659	8	3.00	500 00	94	
..	..	..	1	concrete	clay	710	..	..	..	..	..	..	..	.02	420 00	95	
..	..	..	..	..	stone	90	..	..	..	..	gravel	45	7	.16	203 40	96	
..	..	..	4	stone	stone	330	..	..	..	..	gravel	230	7	2.00	500 60	97	
..	..	..	..	..	..	..	..	..	100	20	gravel	100	8	.31	200 00	98	
9	..	..	192	..	..	11,654	4,940	..	17,916	..	..	16,273	..	87.65	40,745 06		



## SCHEDULE SHOWING THE AMOUNT OF ROAD CONSTRUCTION,

NUMBER	TOWNSHIP	CLEARED AND STUMPED		GRADED		SURFACED		
		Length, rods	Width, feet	Length, rods	Width, feet	Material	Length rods	Width, feet
WEST DIVISION.								
1	Albemarle By-law No. 574 .....	60	25	696	18	gravel	1,243	8
2	Amabel By-law No. 218 .....	.....	.....	250	18	gravel	437	7
3	Chapman By-law 5 .....	.....	.....	1,848	18	gravel	1,570	8
4	Draper By-law No. 378 .....	1,380	50	5,210	18	gravel	620	7
5	Eastnor By-law No. 34 .....	.....	.....	40	20	gravel	1,143	8
6	Himsworth South By-law No. 58B ..	.....	.....	160	22	gravel	160	6
7	Joly By-law No. 169 .....	10	16	115	18	gravel	115	7
8	Keppel By-law No. 12 .....	640	18	575	18	stone	854	8
9	Lindsay By-law No. 285 .....	.....	.....	675	18	gravel	901	7
10	Macaulay By-law No. 60 .....	480	50	2,200	18	gravel	990	5
11	Machar By-law 552 .....	215	24	202	22	gravel	278	7
12	Matchedash By-law No. 197 .....	50	40	.....	.....	gravel	390	8
13	Medonte By-law No. 564 .....	.....	.....	1,405	18	gravel	490	7
14	Medora and Wood By-law No. 322 ...	3,322	50	1,900	18	gravel	900	7
15	Monck By-law No. 460 .....	200	50	4,811	20	gravel	1,285	7
16	Muskoka By-law No. 289 .....	1,020	50	3,787	18	gravel	1,347	7
17	Oro By-law No. 449 .....	330	66	45	22	gravel	165	7
18	Orillia By-law No. 968 .....	100	10	360	20	gravel	765	8
19	Perry, By-law No. 144 .....	220	20	.....	.....	gravel	229	8
20	Sarawak By-law No. 7 .....	.....	.....	505	20	stone	793	7
21	St. Edmunds By-law No. 232 .....	50	15	170	20	gravel	305	7
22	Stisted By-law No. 238 .....	300	50	1,240	18	gravel	340	7
23	Strong By-law No. 403 .....	.....	.....	80	24	gravel	203	6
24	Tay By-law No. 676 .....	.....	.....	777	20	gravel	885	7
25	Tiny By-law No. 593 .....	220	40	875	20	gravel	530	7
26	Vespra By-law No. 619 .....	30	35	120	20	gravel	750	7
27	Watt By-law No. 520 .....	640	40	1,395	20	gravel	415	7
28	Tiny By-law No. 565, 1918 .....	.....	.....	930	22	gravel	395	7
Total .....		9,267	....	30,371	....	.....	18,498	....

## COLONIZATION ROADS BRANCH, UNDER MUNICIPAL BY-LAWS, 1919.

DITCHED	CUT OR FILL		BRIDGES			CULVERTS		NEW ROAD MILEAGE	OLD ROAD MILEAGE	GOVERNMENT EXPENDITURE	NUMBER
Length, rods	Material	Amount in Cubic yards	Number	Span, feet	Material	Number	Material				
.....	rock	20	.....	.....	.....	6	wood	.....	5.50	\$ 750 00	1
.....	earth	270	.....	.....	.....	.....	.....	.....	2.50	500 00	2
.....	.....	.....	3	12	wood	12	wood	.....	9.00	1,000 00	3
30	earth	160	2	18	wood	37	wood	.....	21.00	496 89	4
200	earth	200	.....	.....	.....	.....	.....	.....	4.00	700 00	5
50	.....	.....	.....	.....	.....	.....	.....	.....	.55	100 00	6
.....	.....	.....	.....	.....	.....	1	wood	.....	.40	100 00	7
.....	.....	.....	.....	.....	.....	8	wood	.....	8.00	1,000 00	8
.....	rock	16	.....	.....	.....	2	wood	.....	3.50	900 00	9
.....	earth	30	.....	.....	.....	13	wood	.....	8.00	500 00	10
.....	.....	.....	1	12	wood	.....	.....	.....	1.00	300 00	11
.....	.....	.....	.....	.....	.....	4	wood	.17	1.25	300 00	12
.....	earth	660	1	18	cem'nt	.....	.....	.....	5.00	800 00	13
.....	.....	.....	1	16	wood	13	wood	.....	18.00	700 00	14
.....	rock	60	.....	.....	.....	28	wood	.....	29.00	1,520 16	15
.....	earth	1,015	42	16	wood	30	wood	.....	14.00	1,000 00	16
.....	.....	.....	.....	.....	.....	.....	.....	1.00	.75	525 00	17
215	rock	15	.....	.....	.....	2	concrete	.....	2.50	1,000 00	18
.....	.....	.....	.....	.....	.....	4	wood	.....	.75	150.00	19
.....	.....	.....	.....	.....	.....	2	wood	.....	2.50	797 13	20
.....	.....	.....	.....	.....	.....	.....	.....	.....	1.50	300 00	21
.....	.....	.....	.....	.....	.....	6	wood	.....	4.00	300 00	22
.....	.....	.....	.....	.....	.....	1	metal	.....	.75	199 47	23
.....	stone	360	1	30	cedar	4	metal	.....	4.00	1,000 00	24
20	earth	100	.....	.....	.....	5	metal	.75	3.00	600 00	25
.....	earth	430	.....	.....	.....	1	wood	.....	3.00	500 00	26
.....	earth	600	.....	.....	.....	.....	.....	.....	6.00	500 00	27
125	.....	.....	.....	.....	.....	1	metal	.....	4.00	400 00	28
640	.....	3,936	13	.....	.....	180	.....	1.92	163.45	16,938.65	



ONIZATION ROADS BRANCH, DEPARTMENT OF LANDS, FORESTS AND MINES,  
9.—Continued.

BRIDGES		CULVERTS		CUT AND FILL		OLD ROAD						MILEAGE	EXPENDITURE	NUMBER	
Span	Material	Number	Material	Material	Cubic yards	Side Brushed		Graded and Shaped		SURFACED					
Number						Length, rods	Width, feet	Length, rods	Width, feet	Material	Length, rods	Width, feet			
		21	wood	earth	3,500	340	10	480	16	gravel	1,500	8	6.00	\$ 7,078	30
								120	30	gravel	120	10	.38	200	00
								160	30	gravel	160	10	.50	200	00
		2	tile					80	24	gravel	80	10	.25	108	00
								120	24	gravel	120	10	.38	150	00
								80	24	gravel	80	10	.25	207	28
										gravel	80	6	.25	152	00
								160	40	gravel	160	10	.50	349	50
		1	cedar							gravel	80	10	.25	112	00
								120	30	gravel	120	10	.38	151	00
								80	24	gravel	80	12	.25	150	00
								80	24	gravel	80	10	.25	150	00
								40	24	gravel	40	7	.25	104	00
								40	30	gravel	40	6	.12	104	00
								120	24	gravel	120	10	.38	252	50
		16	wood					775	16	gravel	310	6	3.00	1,018	00
								100	18	earth	132	5	.42	200	00
								35	20	gravel	42	5	.24	100	00
2 14	wood									gravel	80	6	.50	300	00
				earth	250	400	8	120	20	gravel	200	8	3.00	565	35
2 12	wood							40	25	gravel	40	10	.12	50	00
		1	cedar					40	24	stone	40	10	.12	50	00
								160	24	gravel	160	10	.50	200	00
								160	18	gravel	160	6	.50	101	63
								120	24	gravel	120	6	.38	100	50
								80	24	gravel	80	10	.25	105	50
								80	24	gravel	80	10	.25	100	62
		6	cedar					640	24	gravel	640	10	2.00	900	00
1 14	cedar	4	cedar	earth	300	80	20	560	14	gravel	240	6	2.25	1,007	15
								150	14	gravel	135	8	.75	300	00
		5	wood	stone	55	20	10	27	14	gravel	190	6	.50	300	00
								120	74	gravel	120	10	.38	200	00
								120	30	gravel	120	10	.38	203	80
								80	24	gravel	80	10	.25	200	62
										gravel	75	5	.22	100	00
		3	wood			40	55	18	30	gravel	167	5	.65	515	35
								60	18	gravel	52	5	.25	100	00
		10	wood	stone	223			1,125	16	gravel	650	5	5.25	1,656	57
		5	wood										1.50	464	75
										gravel	160	6	.50	150	00
								80	24	gravel	80	6	.25	203	75
								40	24	gravel	40	6	.12	75	00
								160	24	gravel	160	6	.50	223	48
								160	24	gravel	160	6	.50	303	00
								160	24	loam	160	6	.50	204	55
										gravel	40	6	.12	103	50
								160	24	gravel	160	6	.50	150	00
		2	cedar					80	24	gravel	80	6	.25	100	00
								160	24	gravel	160	6	.50	250	50
								240	24	gravel	240	6	.75	200	00





ONIZATION ROADS BRANCH, DEPARTMENT OF LANDS, FORESTS AND MINES.  
9.—Continued.

BRIDGES			CULVERTS		CUT AND FILL		OLD ROAD									
							Side Brushed	Graded and Shaped		SURFACED						
Number	Span	Material	Number	Material	Material	Cubic yards	Length, rods	Width, feet	Length, rods	Width, feet	Material	Length, rods	Width, feet	MILEAGE	EXPENDITURE	NUMBER
															\$ c.	
											gravel	120	6	.41	133 00	51
									24	16	gravel	80	6	.25	154 00	52
									120	24	gravel	120	6	.50	152 50	53
									40	24	gravel	80	6	.50	101 50	54
									80	24	gravel	80	6	.25	100 00	55
			2	cedar							stone	180	5	.56	699 07	56
									80	24	gravel	80	6	.25	107 70	57
			6	wood					525	16	gravel	925	6	3.00	1,183 35	58
			5	wood					320	16	gravel	240	6	1.85	602 50	59
			3	tile			90	8	822	16	gravel	368	5	3.00	601 54	60
							40	20	160	14				.50	217 25	61
									80	16	gravel	80	7	.25	100 50	62
									100	16				.31	100 00	63
									105	16				.32	100 00	64
											gravel	118	5	.35	149 50	65
			1	wood					100	16				.31	100 55	66
							108	16			stone	34	6	.10	147 00	67
			3	stone					34	16	gravel	50	16	.15	99 89	68
									45	16	stone	45	5	.13	100 00	69
1 16	wood		17	wood					230	16	gravel	380	6	5.00	1,500 00	70
			6	wood	stone	1,180	108	16	370	16	gravel	980	6	4.00	1,500 00	71
									63	16	gravel	208	8	2.00	401 80	72
					stone	60			100	40	gravel	40	6	4.00	100 00	73
					earth	360			97	16				.50	300 00	74
									640	16	gravel	81	5	2.00	100 00	75
							45	10	2,390	18	gravel	279	6	7.00	400 00	76
			2	cedar					80	24	gravel	80	6	.25	300 75	77
														.38	200 00	78
									960	18	gravel	160	5	4.50	199 80	79
									40	14	gravel	55	7	.25	103 89	80
									120	18	gravel	300	5	.94	200 50	81
									50	20	stone	40	5	.15	100 00	82
									70	18	gravel	70	5	.21	99 95	83
							150	10			stone	191	5	1.59	777 00	84
			3	tile			160	20	280	16	gravel	120	7	1.00	811 07	85
														2.12	686 69	86
									160	16	gravel	160	7	.50	208 80	87
									85	20	gravel	85	5	.26	102 00	88
									80	22	gravel	62	5	.35	200 00	89
			4	cedar					580	16	gravel	420	7	2.00	707 39	90
			2	cedar			160	20	320	14	gravel	160	7	1.00	303 50	91
			26	wood					1,480	16	gravel	440	7	9.00	1,411 75	92
					earth	400								.38	650 00	93
									150	18	gravel	65	5	.66	502 55	94
											gravel			.75	279 99	95
							30	10	165	16	gravel	150	6	2.00	312 00	96
			5	wood	stone	220	85	18	80	18	gravel	105	8	.66	414 12	97
									80	24	gravel	80	10	.25	101 00	98
											gravel	80	10	.25	200 00	99
									320	24	gravel	320	10	1.00	203 75	100

SCHEDULE SHOWING AMOUNT OF ROAD CONSTRUCTION UNDER THE COL  
ONTARIO, 191

NUMBER	NAME AND LOCATION OF WORK	NEW ROAD							DITCHED
		Cleared and Stumped		Graded and Shaped		SURFACED			
		Length, rods	Width, feet	Length, rods	Width, feet	Material	Length, rods	Width, feet	
EAST DIVISION.—Continued.									
101	Grattan, O'Brien road .....								
102	Grattan, Opeongo line road .....								
103	Grattan, Gorman road .....								
104	Grattan, Dacre and Caldwell road .....								
105	Griffith and Matawatchan Tp. roads .....								
106	Griffith and Dacre Township roads .....								
107	Hagerty, Richards and Burns roads ..	80	40	40	24	gravel	40	10	
108	Harvey Township roads .....								
109	Head, Clara and Maria Twp. roads ..	400	40	160	16				
110	Herschel, Mud Creek bridge, fill .....								
111	Hinchinbrooke Township roads .....								
112	Horton Township roads .....								
113	Howe Island Ferry road .....								
114	Hungerford Township roads .....								
115	Huntingdon Township roads .....								
116	Kennebec Tp., Arden and Horseshoe ..								
117	Laxton, Digby and Longford roads ..								
118	Limerick Township roads .....								
119	Loughboro, Eel Lake road .....								
120	Lutterworth Township roads .....								
121	Lyell Township roads .....	280	40	280	16				
122	Madawaska and Hastings Twp. roads ..								
123	Madoc Township roads .....								
124	Mattawan Township roads .....								
125	Mayo Township roads .....								
126	McNabb Township roads .....								
127	Methune Township roads .....								
128	Miller, Abinger and Miller road .....								
129	Minden and Dorset Township roads ..	840	30	225	16	gravel	60	6	
130	Monmouth Township roads .....								
131	Monteagle and Herschel Twp. roads ..								10
132	Noelville-St. Charles roads .....								
133	North Algona Township roads .....								
134	North Crosby Township roads .....								
135	Olden Township roads .....								
136	Oso, Crow Lake road .....								310
137	Oso, Armstrong road .....	42	40	42	20	gravel	42	6	
138	Oso and Bedford road .....	87	20	87	20				
139	Pakenham Township roads .....								
140	Palmerston Township roads .....	280	40	80	18	gravel	245	6	178
141	Papineau Township roads .....								
142	Pembroke Township roads .....								
143	Pettawawa Township roads .....								
144	Phelps Township road .....	305	40	370	18	gravel	9	10	
145	Radcliffe Township roads .....								
146	Raglan Township roads .....								160
147	Rama Township roads .....	300	15						
148	Ramsay, 7th line road .....								
149	Ratter, lot 2, con. 2 .....								
150	Ratter, Hagar-St. Charles .....	640	40	600	20				

ONIZATION ROADS BRANCH, DEPARTMENT OF LANDS, FORESTS AND MINES,  
9.—Concluded.

BRIDGES			CULVERTS		CUT AND FILL		OLD ROAD						MILEAGE	EXPENDITURE	NUMBER	
Number	Span	Material	Number	Material	Material	Cubic yards	Side- Brushed	Graded and Shaped	SURFACED							
							Length, rods	Width, feet	Length, rods	Width, feet	Material	Length, rods	Width, feet			
									80 24		gravel	80 10		.25	99 00	101
									120 24		gravel	120 10		.38	150 00	102
									120 24		gravel	120 10		.38	156 25	103
									80 24		gravel	80 10		.25	231 00	104
			6	cedar					340 24		gravel	540 5	1.50	942 00	105	
			2	cedar					720 24		gravel	720 10	2.25	714 75	106	
			2	wood					1,640 24		gravel	2,160 10	7.12	2,201 68	107	
			1	tile					60 18		gravel	222 5	.69	420 75	108	
			3	wood					50 16		gravel	20 6	2.50	402 50	109	
1 93	wood				earth	850			16 22					10.00	3,445 44	110
			5	tile	earth	110			340 14		gravel	133 12	1.41	698 30	111	
									160 24		gravel	160 10	.50	200 00	112	
					stone	157					gravel	20 5	.06	400 00	113	
									100 16		gravel	200 7	1.00	384 44	114	
									80 14		gravel	80 7	.25	100 50	115	
											gravel	175 8	.50	201 11	116	
			6	stone	earth	45	8 16		426 18		gravel	243 7	6.25	601 42	117	
			3	cedar					160 14		gravel	320 7	1.00	200 97	118	
			3	tile					147 18		gravel	129 8	.50	201 15	119	
			3	wood			507 16		97 18		gravel	142 6	2.50	316 70	120	
			3	wood					180 16				1.50	527 50	121	
			5	wood					470 16		gravel	20 6	1.50	520 00	122	
			2	iron	stone	100			40 16		gravel	40 7	.12	200 75	123	
			7	wood					350 16		gravel	140 6	1.75	607 00	124	
			3	cedar	cord'y	110			200 16		gravel	220 7	1.00	632 14	125	
									440 30		gravel	440 10	1.50	1,208 00	126	
			2	cedar					134 16		gravel	280 5	.89	302 00	127	
13 16	wood		25	wood	earth	40			40 14		gravel	190 8	.50	200 00	128	
1 15	wood		10	wood	stone	20	2,995 10	3,429 16			gravel	2,100 5	14.00	2,733 97	129	
			3	cedar			395 40		640 20		gravel	1,100 5	3.75	700 00	130	
1 16	wood		2	wood			80 20		564 20		gravel	360 5	2.25	913 64	131	
					earth	81	2,080 50		80 18				6.00	2,493 63	132	
									80 30		gravel	200 10	.62	378 75	133	
			1	tile	stone	177			199 18		gravel	161 6	.75	457 65	134	
			4	tile					320 18		gravel	410 6	2.25	401 75	135	
									320 14		gravel	310 6	1.00	299 56	136	
													.13	200 50	137	
					stone	165							.26	300 00	138	
					earth	30			280 40		gravel	280 6	.88	700 90	139	
			5	cedar	stone	485			162 14		gravel	355 6	2.50	1,180 70	140	
			14	wood	earth	30			1,720 16		gravel	280 6	6.00	1,524 75	141	
									640 24		gravel	640 10	2.00	881 00	142	
			2	tile	earth	250			440 40		gravel	440 6	1.75	599 50	143	
			14	wood									.88	511 65	144	
			7	cedar					920 24		gravel	900 6	2.50	1,007 50	145	
			6	cedar					400 24		gravel	400 6	2.00	633 49	146	
					earth	30	400 20		275 7		gravel	275 7	2.75	1,204 02	147	
									160 40		gravel	160 10	.50	299 00	148	
					earth	600	6 66						.02	450 00	149	
			13	wood	rock-c	527							3.00	1,500 00	150	



SCHEDULE SHOWING AMOUNT OF ROAD CONSTRUCTION UNDER THE COL-  
ONTARIO,

NUMBER	NAME AND LOCATION OF WORK	NEW ROAD						DITCHED	
		Cleared and Stumped		Graded and Shaped		SURFACED			
		Length, rods	Width, feet	Length, rods	Width, feet	Material	Length, rods		Width, feet
EAST DIVISION.—Continued.									
151	Rear of Yonge Township roads .....								
152	Rolph, Buchanan & Wylie Twp. roads .....								
153	Ross Township roads .....								
154	Sabine Township roads .....	320	40	320	18				
155	Sebastopol Township roads .....	40	50			gravel	40	10	160
156	Sheffield Township roads .....								
157	Sherwood & Jones Township roads ..								
158	Smith Township, Buckhorn road .....								
159	Somerville, Bobcaygeon road .....								
160	South Crosby Township roads .....								
161	South Algona Township roads .....								
162	South Algona (Dunnigan) .....					no work	done		
163	Stafford Township roads .....								
164	Storrington Township roads .....								200
165	Tudor and Cashel Township roads....								
166	Wollaston Township roads .....								
167	Westmeath Township roads .....								
168	Widdifield Township roads .....	60	40	60	18				
169	Wilberforce Township roads .....								
170	Yonge, Escott road .....								
Total .....		6,974	....	4,069	....	....	1021	....	2,311

ONIZATION ROADS BRANCH, DEPARTMENT OF LANDS, FORESTS AND MINES, 1919.—Concluded.

BRIDGES			CULVERTS		CUT AND FILL		OLD ROAD						MILEAGE	EXPENDITURE	NUMBER	
							Side- Brushed		Graded and Shaped		SURFACED					
Number	Span	Material	Number	Material	Material	Cubic yards	Length, rods	Width, feet	Length, rods	Width, feet	Material	Length, rods				Width, feet
..	..	..	..	..	rock	677	..	..	45	18	..	..	..	..	..	\$ c.
..	..	..	3	cedar	..	..	..	..	200	24	gravel	360	7	1.10	500 00	152
..	..	..	..	..	..	..	..	..	560	24	gravel	580	6	1.75	837 00	153
..	..	..	7	wood	..	..	..	..	397	16	gravel	50	6	2.50	531 74	154
..	..	..	3	cedar	..	..	..	..	440	24	gravel	480	10	2.00	657 75	155
..	..	..	4	wood	rock	473	20	10	223	14	gravel	410	6	1.75	901 22	156
..	..	..	6	cedar	..	..	..	..	760	20	gravel	820	6	3.00	1,203 55	157
..	..	..	..	..	..	..	..	..	169	18	gravel	112	5	.53	301 10	158
..	..	..	3	tile	stone	110	170	32	165	18	gravel	190	6	1.00	375 00	159
..	..	..	..	..	..	..	95	18	..	..	gravel	301	8	1.12	397 98	160
..	..	..	1	cedar	..	..	..	..	600	24	gravel	422	6	2.00	854 75	161
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	500 00	162
..	..	..	..	..	..	..	..	..	240	24	gravel	240	10	.75	325 00	163
..	..	..	4	wood	..	..	..	..	267	16	gravel	479	10	1.75	700 60	164
..	..	..	9	cedar	..	..	210	20	800	14	gravel	..	..	2.50	808 86	165
..	..	..	1	tile	..	..	..	..	80	16	gravel	80	7	.25	200 00	166
..	..	..	..	..	..	..	..	..	480	30	gravel	480	5	1.75	726 53	167
2 18	wood	13	wood	..	..	..	..	..	535	16	gravel	1,502	7	7.00	1,374 95	168
..	..	..	2	wood	..	..	..	..	1,280	24	gravel	1,280	6	4.00	1,659 47	169
..	..	..	..	..	..	..	..	..	..	..	gravel	107	8	.50	100 00	170
.. 75	..	380	..	..	..	11,615	8.827	..	51,665	..	..	39,182	..	245.81	88,101 03	

## SCHEDULE SHOWING THE AMOUNT OF ROAD CONSTRUCTION, CO

NUMBER	TOWNSHIP	Cleared and Stumped		GRADED		SURFACED		
		Length, rods	Width, feet	Length, rods	Width, feet	Material	Length, rods	Width, feet
EAST DIVISION.								
1	Admaston By-law No. 231 .....			1,120	24	gravel	1,280	10
2	Bagot and Blythfield By-law No. 325 .....			520	30	gravel	520	10
3	Bedford By-law No. 37 B .....			112	16	gravel	305	7
4	Belmont By-law No. 606 .....			120	18	stone	302	5
5	Bromley By-law No. 281 .....			960	30	gravel	960	10
6	Caldwell By-law No. 271 .....			2,265	20	gravel	740	5
7	Camden By-law No. 485 .....					stone	1,628	6
8	Cardiff By-law No. 538 .....	503	10	3,813	18	gravel	75	6
9	Carlow By-law No. 112 .....	140	20	400	16	gravel	240	7
10	Casimer, etc., By-law No. 84 .....			990	20	gravel	58	7
11	Chisholm By-law No. 94 .....			40	18			
12	Cosby and Mason By-law No. 41 .....			1,400	20	gravel	110	8
13	Dourc By-law No. 869 .....			325	18	gravel	185	5
14	Dummer By-law No. 864 .....			820	16	stone	229	6
15	Dungannon By-law No. 89 .....	120	20	360	16	gravel	50	7
16	Dysart By-law No. 603 .....	3,610	12	7,310	16	gravel	1,787	5
17	Eldon By-law No. 486 .....			294	18	stone	586	5
18	Elzevir By-law No. 38 A .....			14	14	gravel	600	7
19	Front of Leeds By-law No. 739 .....			265	18	stone	1,756	6
20	Grattan By-law No. 271 .....			1,400	30	gravel	1,400	10
21	Hinchinbrooke By-law No. 4 .....			862	16	gravel	1,713	8
22	Hungerford By-law No. 224 .....			180	14	gravel	240	7
23	Hungerford By-law No. 228 .....			30	16	gravel	80	5
24	Huntingdon By-law No. 406 .....			400	16	gravel	480	7
25	Limerick By-law No. 4 .....	80	20	320	14	gravel	480	7
26	Loughboro By-law No. 111 A .....			60	18	stone	360	8
27	Madoc By-law No. 44 .....			480	14	gravel	500	7
28	Marmora and Lake By-law No. 538 .....			720	16	gravel	880	7
29	Martland By-law No. 133 .....			960	20	gravel	820	6
30	Mayo By-law No. 334 .....	40	20	280	16	gravel	160	7
31	Monteagle and Herschel By-law No. 483 .....			560	14			
32	Minden By-law No. 318 .....	1,530	8	1,737	12	gravel	668	5
33	Olden By-law No. 50 B .....			1,023	16	gravel	1,115	8
34	Oso By-law No. 154 .....	15	40	774	18	gravel	1,177	7
35	Pittsburg By-law No. 4 .....					stone	585	8
36	Portland By-law No. 612 .....					stone	160	8
37	Rama By-law No. 362 .....					stone	814	6
38	Ratter and Dunnett By-law No. 22 .....	920	12	2,640	18	gravel	1,040	6
39	Rawdon By-law No. 403 .....			320	14	gravel	400	7
40	Richmond By-law No. 657 .....					stone	405	8
41	Ross By-law No. 363 .....			1,680	30	gravel	1,680	10
42	Sheffield By-law No. 634 .....			64	16	gravel	265	8
43	Sherwood and Jones By-law No. 20 .....			940	24	gravel	940	10
44	Snowden By-law No. 198 .....	1,150	10	2,605	16	gravel	783	6
45	Somerville By-law No. 710 .....	114	15	236	16	gravel	528	6
46	Springer By-law No. 305 .....			750	20	gravel	668	8
47	Stafford By-law No. 691 .....			680	30	gravel	760	10
48	Stanhope By-law No. 348 .....	50	10	2,202	16	gravel	225	7
49	Storrington By-law No. 477 .....					stone	565	8
50	Tudor and Cashel By-law No. 12 .....			1,280	14	gravel	1,200	7
51	Tyendinaga By-law No. 681 .....			400	16	gravel	640	7
52	Westmeath By-law No. 220 .....			1,360	24	gravel	1,360	10
53	Wollaston By-law No. 1 .....			160	14	stone	400	7
54	Wollaston By-law No. 7 .....							
	(Purchase of stone crusher)							
	Total .....	8,272		46,281			34,892	

LONIZATION ROADS BRANCH, UNDER MUNICIPAL BY-LAWS, 1919.

DITCHED	CUT OR FILL		BRIDGES			CULVERTS		NEW ROAD MILEAGE	OLD ROAD MILEAGE	GOVERNMENT EXPENDITURE	NUMBER
	Material	Amount in cubic yards	Number	Span. feet	Material	Number	Material				
										\$	c.
									4.00	1,050 00	1
						2	metal		1.63	1,000 67	2
						1	metal		1.75	450 00	3
									1.25	600 00	4
									3.00	1,225 00	5
	rock	230				2	metal		15.00	1,271 01	6
125									5.10	1,000 00	7
						35	wood		22.00	1,000 00	8
375						6	cedar		1.25	450 00	9
									5.00	550 00	10
									1.00	524 82	11
						22	wood		8.00	349 09	12
									1.10	150 00	13
									3.00	300 00	14
400	earth	200				10	cedar		1.12	300 00	15
20						35	wood		57.00	2,986 87	16
			1	35	cem't	2	metal		2.00	799 60	17
									2.00	400 00	18
						6	metal		6.00	1,427 32	19
1,000	stone	200							4.50	1,009 80	20
						16	metal		11.00	950 00	21
									.75	200 00	22
									.25	50 00	23
						1	cedar		1.50	299 98	24
120						3	cedar		1.50	400 00	25
									1.50	350 00	26
						3	metal		2.00	400 00	27
									3.00	500 00	28
				3	wood	5	wood		6.00	674 42	29
						9	cedar		1.00	350 00	30
				10	cedar	8	cedar		2.00	400 00	31
			1	20	wood	11	wood		8.00	700 00	32
						11	metal		4.00	750 00	33
	earth	420				19	stone		4.00	1,200 00	34
									1.80	450 00	35
									3.32	500 00	36
300	earth	150							2.75	800 00	37
						10	wood		10.00	675 00	38
						3	cedar		1.25	400 00	39
									1.51	500 00	40
60									5.25	1,500 00	41
						4	metal		1.50	298 25	42
	cement	225							3.00	1,200 00	43
16	stone	125				14	wood		10.00	699 97	44
			2	16	wood	2	metal		3.00	500 00	45
						3	wood		3.00	996 22	46
150	rock	40							2.50	596 58	47
						15	wood		8.00	350 00	48
						1	tile		2.00	450 00	49
						3	cedar		4.00	750 00	50
									2.25	500 00	51
									4.25	1,000 00	52
									1.25	350 00	53
										500 00	54
2,566		1,590	7			262			262.83	37,084 60	



SCHEDULE SHOWING AMOUNT OF ROAD CONSTRUCTION UNDER THE COL  
ONTARIO

NUMBER	NAME AND LOCATION OF WORK	NEW ROAD							DITCHED
		Cleared and Stumped		Graded and Shaped		SURFACED			
		Length, rods	Width, feet	Length, rods	Width, feet	Material	Length, rods	Width, feet	
	TIMISKAMING.								
1	Armstrong, from the T.N.O. west .....								
2	Armstrong, cons. 3-4, to Earlton .....								
3	Armstrong, con. 1, lots 2-3 .....	160	40	300	24				160
4	Armstrong, cons. 2-3, lots 10-11 .....								
5	Armstrong, con. 6, lots 2-3 .....	240	30	240	30				
6	Armstrong, between lots 4-5 .....								
7	Barber, between lots 2-3, Leeville....	262	24	107	16				234
8	Barber and Cane, townline .....								
9	Barber and Tudhope, lots 1-2 .....								
10	Brethour, cons. 4-5, lots 1-6 .....	160	30			gravel	12	5	320
11	Brethour, cons. 5-6, lots 4, 5, 6 .....	240	30	240	24				480
12	Brethour, cons. 5-6, lots 6-7 .....								655
13	Brethour, T.L., lots, 2, 3, 4 .....								60
14	Brethour and Casey, T.L., lot 4 .....								
15	Bucke, High Falls west, con. 4 .....								
16	Bucke, Wabi River road .....								6
17	Bucke, Mill Creek road .....								
18	Bucke, Lakeview to McDonalds .....								
19	Bucke, Main road south .....								50
20	Cane, lots 1-2, cons. 5-6 .....								70
21	Cane, lots 4, 5, con. 5 .....								160
22	Cane, lots 8-9, cons. 5-6 .....	320	35	20	30				25
23	Cane, lots 6-7, from Oso .....								
24	Cane, cons. 5-6, lots 11-12 .....	320	24						200
25	Cane, lots, 10-11, con. 4 .....	160	30						36
26	Cane, lots 4-5, cons. 3-4 .....								
27	Cane, between lots 4-5, con. 2 .....	91	30	91	22				190
28	Casey, cons. 3-4, lots 1-2 .....								320
29	Casey, Cobalt road .....								
30	Casey, Mine road .....			118	24				500
31	Casey, con. 6, lots 9-10 .....			160	16				160
32	Casey, T.L. north between lots 4-5...	240	30	80	26				160
33	Casey, lots 6-7, cons. 3-4 .....								180
34	Casey, T.L., con. 3 .....								640
35	Dymond, lots 6-7, con. 6 .....								240
36	Dymond, North road, cons. 5-6 .....								
37	Dymond, North road, con. 6 .....								
38	Dymond, west road .....								210
39	Firstbrook, Main road, lots 1-4 .....								340
40	Firstbrook, Drapo road, con. 2 .....	324	40	320	20				
41	Firstbrook, cons. 2-3 .....								
42	Henwood, lots 2-3, con. 4 .....								160
43	Henwood, lots 2-3, con. 6 .....	260	40	200	24				160
44	Henwood, cons. 2-3, lots 5-6 .....								460
45	Henwood, lots 11-12, con. 3 .....								
46	Henwood, lots 8-9, con. 6 .....	100	33	100	24				200
47	Henwood, cons. 4-5, lots 7-12 .....								
48	Henwood, cons. 5-6, lot 9 .....	160	30	100	22				
49	Henwood, between lots 6-7, cons. 3-4 .....								
50	Henwood, cons. 3-4, lots 6, 7, 8 .....								400

ONIZATION ROADS BRANCH, DEPARTMENT OF LANDS, FORESTS AND MINES,  
O, 1919.

BRIDGES			CULVERTS		CUT AND FILL		OLD ROAD						MILEAGE	EXPENDITURE	NUMBER	
Number	Span	Material	Number	Material	Material	Cubic yards	Side- Brushed		Graded and Shaped		SURFACED					
							Length, rods	Width, feet	Length, rods	Width, feet	Material	Length, rods	Width, feet			
			1	wood							gravel	80	8	.25	\$ 817 07	1
			1	wood			200	20	320	22				1.00	402 05	2
1r		wood	3	wood	earth	1,015								1.00	500 00	3
2	64	wood	2	wood	earth	533								.50	296 70	4
									300	24	gravel	194	7	1.00	508 00	5
1	16	wood	1	wood	earth	55								1.00	408 75	6
1	16	wood	4	wood					640	24				1.00	705 47	7
			1	wood	earth	287					earth	40	8	2.00	396 14	8
			1	wood										1.00	300 50	9
			1	wood										1.00	501 25	10
			1	wood										1.00	500 00	11
			1	wood					640	24				2.00	699 00	12
			1	wood							gravel	272	8	1.00	801 05	13
											gravel	213	7	.70	493 07	14
			4	wood	earth	118			400	24	gravel	116	7	2.00	500 00	15
			1	wood {	earth	493			30	24				2.00	500 00	16
				stone	342											
											stone	186	7	.75	302 93	17
											gravel	75	8	.25	199 67	18
					stone	20			30	24	stone	213	7	2.00	502 12	19
											gravel	107	7	.50	362 85	20
														.50	397 75	21
									80	24	gravel	35	7	1.00	499 87	22
														.25	199 00	23
			2	wood										1.00	602 60	24
			1	wood										1.00	394 00	25
			1	wood					380	24	gravel	82	7	1.25	201 07	26
														.50	300 62	27
											earth	265	7	1.25	613 58	28
											stone	100		.50	236 00	29
			7	wood					387	24	stone	20	6	1.50	602 12	30
														.50	499 18	31
														.75	701 81	32
			1	wood					120	24	gravel	160	7	1.00	900 00	33
1	33	wood	2	wood	earth	1,058	320	10			earth	140	6	1.00	400 00	34
					earth	40			320	22	earth	58	7	2.50	798 75	35
					stone	55			240	24	gravel	139	7	3.00	998 05	36
			4	wood					160	30	gravel	100	7	.50	747 12	37
			9	wood					560	24	gravel	600	8	2.00	2,000 00	38
2	36	wood	1	wood	earth	55			480	24	gravel	173	7	2.00	1,007 40	39
1	75	wood	2	wood	stone	55	160	15	160	24	gravel	30	7	1.00	500 00	40
			1	metal					320	24				1.50	500 00	41
														1.00	500 36	42
1	18	wood	2	wood										1.00	301 40	43
			1	wood	earth	177			240	22				.75	399 61	44
			1	wood					320	22				1.00	300 00	45
			5	wood										.50	200 35	46
			1	wood					800	24	gravel	14	7	3.00	519 50	47
														.50	299 14	48
					earth	60			360	24				2.00	400 00	49
									370	24				1.25	399 62	50

SCHEDULE SHOWING AMOUNT OF ROAD CONSTRUCTION UNDER THE COL  
ONTARIO, 191

NUMBER	NAME AND LOCATION OF WORK	NEW ROAD							DITCHED
		Cleared and Stumped		Graded and Shaped		SURFACED			
		Length, rods	Width, feet	Length, rods	Width, feet	Material	Length, rods	Width, feet	
TIMISKAMING.—Continued.									
51	Henwood, lots 10-11, cons. 5-6								
52	Harris, lots 4-5, con. 6								340
53	Harris, T.L., lots 2-3, north								
54	Harris, lots 2-3, con. 6								110
55	Harris, cons. 5-6, lots 1-4								
56	Harris, Lake Shore road								76
57	Harris, cons. 2-3, lot 1								
58	Hudson, lots 2-3, cons. 2-3								58
59	Hudson, lots 6-7, con. 5								440
60	Hudson, cons. 3-4, lots 1-7								
61	Hudson, T.L., lot 6								
62	Hudson, lots 3-4								
63	Hudson, T.L., Kerns, lots 2, 3, 4								
64	Hudson, T.L., Kerns, lots 9-10			200	24	gravel	115	7	350
65	Harley, cons. 5-6, lots 10-12								400
66	Harley, cons. 4-5, lots 11-12								
67	Harley, lots 819, con. 5								
68	Harley, lots 4-5, con. 4								
69	Harley, between lots 2-3, con. 4	240	10						204
70	Harley, cons. 5-6, lots 4, 5, 6	160	30	160	30	gravel	80	7	
71	Harley, T.L., Casey, con. 6								420
72	Harley-Dymond, North road, west								
73	Harley-Hilliard, T.L., lots 9-11								
74	Hilliard, lots 3, 4, 5, con. 4								
75	Hilliard, lots 8-9, cons. 1-2								
76	Hilliard, lots 6-7, cons. 5-6								130
77	Hilliard, lots 4-5, con. 3	100	10	180	24				75
78	Hilliard, lots 6-7, con. 5-6								665
79	Hilliard, lots 2-3, con. 6								225
80	Hilliard, Gravel Pit road	258	25						
81	Hilliard, Armstrong T.L., cons. 1-4								
82	Hilliard, Harley, T.L., lot 2-8								15
83	Ingram T.L., lots 3-4	60	33	320	24				640
84	Kerns, cons. 3-4, lots 1, 2, 3								
85	Kerns, lots 6-7, con. 6	30	30						280
86	Kerns-Armstrong T.L., east								
87	Kerns-Armstrong T.L., T.N.O.								
88	Kerns-Harley, T.L., lots 4, 5, 6								
89	Kerns-Henwood T.L., cons. 3-6								
90	Tudhope, lots 4-5, con. 2	160	40	260	20				70
91	Tudhope, lots 2-3, con. 1			370	15				370
Total		4,045		3,566			207		11,644

ONIZATION ROADS BRANCH, DEPARTMENT OF LANDS, FORESTS AND MINES.  
9.—Continued.

BRIDGES		CULVERTS		CUT AND FILL		OLD ROAD						MILEAGE	EXPENDITURE	NUMBER		
Number	Span	Material	Number	Material	Material	Cubic yards	Side- Brushed		Graded and Shaped		SURFACED					
							Length, rods	Width, feet	Length, rods	Width, feet	Material	Length, rods	Width, feet			
..	..	..	2	wood	rock	10	..	..	160	24	gravel	160	7	.50	500 00	51
..	..	..	..	..	..	..	..	..	..	..	..	..	..	1.00	535 02	52
..	..	..	2	wood	earth	800	..	..	370	22	gravel	240	..	.75	700 00	53
..	..	..	..	..	stone	221	..	..	..	..	..	..	..	2.00	834 50	54
..	..	..	4	wood	..	..	..	..	660	16	gravel	6	..	.50	301 54	55
..	..	..	..	..	earth	693	..	..	..	..	gravel	172	6	2.00	352 00	56
..	..	..	..	..	..	..	..	..	..	..	..	..	..	.50	350 00	57
..	..	..	..	..	gravel	120	..	..	320	24	gravel	100	6	2.00	499 70	58
..	..	..	..	..	..	..	..	..	80	24	gravel	80	8	1.50	500 00	59
..	..	..	..	..	..	..	..	..	..	..	gravel	357	7	1.50	1,000 52	60
..	..	..	..	..	..	..	..	..	..	..	gravel	240	7	.75	404 97	61
..	..	..	..	..	..	..	..	..	640	24	gravel	160	7	2.00	600 00	62
..	..	..	..	..	..	..	..	..	320	24	gravel	310	6	1.00	806 30	63
..	..	..	..	..	..	..	..	..	..	..	..	..	..	.75	300 62	64
..	..	..	..	..	..	..	..	..	160	24	..	..	..	1.00	302 50	65
..	..	..	..	..	..	..	..	..	380	24	..	..	..	1.25	275 00	66
..	..	..	1	..	earth	743	..	..	..	..	gravel	30	7	.50	399 18	67
..	..	..	..	..	earth	1,031	..	..	..	..	..	..	..	.25	200 00	68
..	..	..	..	..	..	..	..	..	..	..	..	..	..	.75	300 00	69
..	..	..	..	..	..	..	..	..	..	..	..	..	..	.50	202 53	70
..	..	..	..	..	..	..	..	..	320	26	..	..	..	1.00	400 07	71
..	..	..	..	..	..	..	..	..	..	..	gravel	240	7	.75	800 00	72
..	..	..	..	..	..	..	..	..	..	..	gravel	208	7	.75	500 95	73
..	..	..	1	wood	..	..	..	..	60	24	gravel	110	8	.50	401 76	74
..	..	..	..	..	..	..	..	..	..	..	gravel	340	7	1.50	600 00	75
..	..	..	..	..	gravel	148	..	..	70	24	gravel	35	7	1.50	200 00	76
..	..	..	1	wood	..	..	..	..	..	..	..	..	..	1.00	298 50	77
..	..	..	1	wood	..	..	..	..	160	24	earth	190	8	1.00	300 00	78
..	..	..	1	wood	..	..	60	8	..	..	earth	60	8	1.00	235 32	79
..	..	..	2	wood	..	..	..	..	..	..	..	..	..	1.00	298 75	80
..	..	..	1	wood	..	..	..	..	..	..	gravel	309	7	2.00	699 41	81
..	..	..	1	wood	earth	222	..	..	240	24	gravel	65	7	2.00	399 36	82
1 12	wood	1	..	..	..	..	..	..	..	..	..	..	..	1.00	462 57	83
..	..	..	..	..	..	..	..	..	..	..	earth	400	7	1.25	800 00	84
..	..	..	..	..	..	..	..	..	..	..	..	..	..	.75	401 32	85
..	..	..	..	..	gravel	80	..	..	..	..	gravel	210	8	2.00	810 85	86
..	..	..	..	..	..	..	..	..	..	..	gravel	160	8	.50	599 80	87
1 16	wood	..	..	..	earth	711	..	..	..	..	..	..	..	1.00	715 08	88
..	..	..	..	..	..	..	..	..	400	24	gravel	303	7	3.00	999 00	89
1 15	wood	1	wood	..	..	..	..	..	..	..	..	..	..	.85	699 56	90
..	..	..	..	..	..	..	..	..	..	..	..	..	..	1.25	700 00	91
13	..	..	81	..	..	9,142	740	..	4,760	..	..	7,897	..	104.05	46,802 70	



SCHEDULE SHOWING THE AMOUNT OF WORK OF ROAD CONSTRUCTION,

NUMBER	TOWNSHIP	CLEARED AND STUMPED		GRADED		SURFACED		
		Length, rods	Width, feet	Length, rods	Width, feet	Material	Length, rods	Width, feet
	TEMISKAMING.							
1	Brethour By-law No. 12 .....	960	20	2,500	24	gravel	1,236	8
2	Bucke By-law No. 223 .....	320	10	2,540	24	stone	540	8
3	Casey By-law No. 55 .....	310	15	660	24	stone	231	8
4	Chamberlain By-law No. 60 .....	400	20	3,226	24	gravel	305	7
5	Dymond By-law No. 185 .....	.....	.....	9,180	20	gravel	402	7
6	Harris By-law No. 63 .....	44	20	925	24	gravel	207	7
7	Hilliard By-law No. 108 .....	145	10	3,780	24	gravel	506	7
8	Hudson By-law No. 76 .....	.....	.....	770	24	gravel	30	8
9	Kerns By-law No. 166 .....	260	10	7,900	20	gravel	853	8
	Total .....	2,439	.....	31,481	.....	.....	4,310	.....

## COLONIZATION ROADS BRANCH, UNDER MUNICIPAL BY-LAWS, 1919

DITCHED	CUT* OR FILL		BRIDGES			CULVERTS		NEW ROAD MILEAGE	OLD ROAD MILEAGE	GOVERNMENT EXPENDITURE		NUMBER
Length, rods	Material	Amount in Cubic yards	Number	Span, feet	Material	Number	Material					
706	earth	1,355	.....	.....	.....	9	wood	1.50	17.00	\$ 2,715	c. 00	1
1,410	earth	106	1	22	wood	3	wood	.....	8.50	1,275	00	2
855	earth	20	2	16	wood	6	wood	1.00	7.00	1,039	00	3
31	clay	100	.....	.....	wood	19	wood	.50	13.00	799	97	4
1,260	earth	1,404	5	24	wood	14	wood	.....	32.00	2,018	63	5
241	rock	456	8	16	wood	.....	.....	.15	3.00	623	96	6
1,858	earth	911	3	20	wood	5	wood	.....	12.50	1,701	20	7
.....	earth	888	.....	.....	.....	3	wood	.50	3.50	600	00	8
328	earth	515	1	24	wood	17	wood	.....	28.00	1,684	27	9
6,689	.....	5,755	20	.....	.....	76	.....	3.65	124.50	12,457	03	

## MISCELLANEOUS.

## NORTH DIVISION.

Item.	Expenditure.	
1. Van Horne Township, balance .....	22 00	
2. Ware Township, balance .....	101 00	
3. Phillips & Benner, survey .....	205 97	
4. Jas. Fraser, culverts .....	29 50	
5. Storage of tools .....	75 00	
6. Luke Waker, compensation for injuries, Dryden road .....	150 50	
7. Inspection, 1919 .....	5,204 57	
		<u>\$5,788 54</u>

## WEST DIVISION.

8. Juddhaven road, balance, 1918 .....	\$50 00	
9. Carling Township roads, balance, 1918 .....	91 08	
10. C. H. Meader, survey and location expenses, Bracebridge-Baysville and Chisholm Township road .....	36 00	
11. Bury road, balance, 1918 .....	29 40	
12. Lawrence Masters, compensation for injuries, Bethune Township road .....	29 70	
13. Jno. W. Sanders, Compensation for injuries on the Bracebridge-Baysville road .....	20 62	
14. Inspection, 1919 .....	2,271 80	
		<u>\$2,528 60</u>

## EAST DIVISION.

15. W. W. Pringle, Addington road, balance, 1918 .....	\$50 10	
16. August Blenkie, Addington and Palmer Rapids road, balance, 1918 .....	25 65	
17. J. Beatty, Kaladar and Tweed, balance, 1918 .....	21 50	
18. Wm. Hughes, storage of tools, Addington road, balance, 1918 .....	11 85	
19. Grant to Storrington Township, 1918 .....	300 00	
20. L'Amable Station road, gravel .....	100 00	
21. Long Lake Cemetery hill, cedar .....	294 00	
22. Jas. Douglas, compensation for injuries, Carlow road ....	42 96	
23. P. Rochefort, railway fares, balance, 1918 .....	53 80	
24. H. N. Moss, board account .....	14 00	
25. A. J. Southern, inspection .....	114 30	
26. P. Rochefort, Chisholm road inspection .....	26 00	
27. One McLaughlin motor car .....	1,414 85	
28. Feronia road, balance .....	33 00	
29. Charleston Lake road, R. E. Cornell .....	25 00	
30. Inspection, 1919 .....	7,498 15	
		<u>\$10,025 16</u>

## TEMISKAMING.

31. Harley road, balance, Allan Ludlow .....	50 00	
32. W. E. Kerr, storage of tools .....	72 00	
33. E. Frisby, Diamond Township, balance, 1917 .....	274 62	
34. Frank Leslie, balance, Temiskaming road .....	15 63	
35. Inspection, 1919 .....	1,040 05	
		<u>\$1,452 30</u>
		<u>\$19,794 60</u>

No.	RECAPITULATION	Cleared and stumped	Graded and shaped	Surfaced	Ditched	Cut and fill	Bridges	Culverts	New Road	Old Road	EXPENDITURE No.
		rods	rods	rods	rods	cu. yds.	number	number	miles	miles	
1	North Division, Direct Grants..	23,997	41,713	27,388	15,779	20,113	51	409	40.00	176.95	\$ c. 78,300 85 1
2	North Division, By-laws.....	11,308	49,784	39,635	21,575	8,057	23	344	19.06	253.13	50,397 02 2
3	West Division, Direct Grants..	8,870	20,632	17,923	1,611	11,654	9	192	12.65	75.00	40,745 06 3
4	West Division, By-laws.....	9,267	30,371	18,498	640	3,936	13	180	1.92	163.45	16,938 65 4
5	East Division, Direct Grants ..	15,801	55,734	40,203	2,311	11,615	75	380	21.81	224.00	88,101 03 5
6	East Division, By-laws.....	8,272	46,281	34,892	2,566	1,590	7	262	.....	262.83	37,084 60 6
7	Temiskaming, Direct Grants..	4,785	8,326	8,104	11,644	9,142	13	81	12.65	91.40	46,802 70 7
8	Temiskaming, By-laws .....	2,439	31,481	4,310	6,689	5,755	20	76	3.65	124.50	12,457 03 8
9	Miscellaneous (4 Divisions)....	.....	.....	.....	.....	.....	.....	.....	.....	.....	19,794 60 9
Total.....		84,739	284,322	190,953	62,815	71,862	211	1,924	111.74	1,371.26	390,621 54





Steel bridge at Kapuskasing; erected 1919.



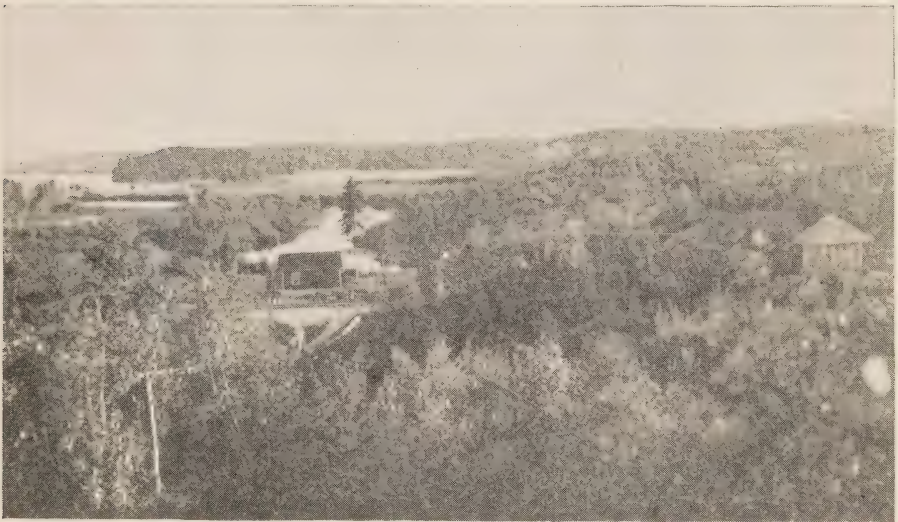
Building a home in the North.

*Appendix No. 43.*

*The Honourable the Minister of Lands, Forests and Mines, Ontario.*

SIR,—I have the honour to submit to you the report of the work of the Northern Development Branch, done under my supervision during the season ending October 31st, 1919, in Temiskaming District and that part of Algoma District in the vicinity of the Town of Hearst, being otherwise described as: (1) the area tributary to the Temiskaming and Northern Ontario Railway and its branches from Latchford to its Northern terminus at Cochrane, a distance of almost one hundred and sixty miles, and (2) the area tributary to the Canadian National Railways from the Quebec boundary westward, for a distance of about two hundred miles.

On account of the scattered settlements in Northern Ontario, the problem of providing good roads for all is very difficult and costly, particularly so when



Scene at Swastika, Ont.

wages are high and labor is scarce. In many cases it is a question of having a bad road or of having no road at all, so that we have, in order to serve the different isolated settlements, many miles of road varying in quality from very good to very bad, much of it often impassable at certain seasons of the year. With more compact settlements the same expenditure would have constructed better and more satisfactory roads on account of less mileage required.

No new roads were cut out in advance of settlement during the past season. This class of work was only done in order to let settlers out and give their children access to school. The principal work done was towards the completing of roads that had been commenced, and the repairing and improving of existing roads. Considerable gravelling was done during the winter in the neighborhood of Matheson, Monteith and Cochrane. It was found to be more cheaply done in winter and provided work for settlers during a slack time.

The details of most of the work done are shown in the accompanying schedule in tabulated form. In addition to what is shown on this schedule, a steel bridge

was erected over the Kapuskasing River in O'Brien Township, and the sub-structure for another over the Mattagami River, near Timmins, has been almost completed. Erection of the steel will probably be completed during the month of January.

Besides constructing roads and bridges for settlers, considerable attention was paid to the wants of the mining population. A railroad from Swastika to Kirkland Lake Mining Camp had been projected, but on the representation of the people interested and to avoid the heavy expenditure entailed, it was decided to undertake the construction of a water bound macadam road.



Road in Temiskaming.

The construction of a similar road from Elk Lake to Gowganda was undertaken in lieu of the railroad that had been urgently requested. It was estimated that it would cost three-fourths less to construct, and that it would answer all requirements.

Considerable progress was made on both of these roads under most trying labor and weather conditions. Several months' work, with more favorable conditions, will probably see the completion of the former road, but it will require



several seasons to complete the road to Gowganda without considerable expenditure upon additional plant and equipment.

In conclusion, I have to say that all our road work could be carried on more efficiently if our organization included more technically trained and experienced road makers. Modern road building is an occupation by itself and too much responsibility should not be allowed to rest on the shoulders of the local handy man who has not had the training and experience necessary to do the best work.

All of which is respectfully submitted.

I have the honour to be, Sir,

Your obedient servant,

C. H. FULLERTON,  
*Director, Northern Development Branch,  
Temiskaming District.*

Toronto, October 31st, A.D. 1919.

*The Honourable the Minister of Lands, Forests and Mines, Ontario.*

SIR,—Under the provisions of the Act of 1912, and subsequent amendments, for the development of Northern and North-Western Ontario, I recommend for the construction, maintenance and repairs of roads and bridges the following expenditures, for the season ending October 31st, 1920.

(A) In the territory served by the Temiskaming and Northern Railway from Latchford to Cochrane.	
(1) From Latchford to Swastika, including the Elk Lake and Charlton branches of the railway and mining camps of Boston Creek, Kirkland Lake and Larder Lake .....	\$100,000
(2) From Swastika to Monteith .....	75,000
(3) From Monteith to Cochrane, including the Iroquois Falls Branch and Porcupine branch of the Railway as far as Porcupine River.	75,000
(4) The Porcupine Mining District, including Mountjoy Township	50,000
(B) In the territory served by the Canadian National Railways, from the Quebec boundary to Grant, and southerly along the Algoma Central Railway to Oba.	
(1) From the Quebec boundary, west to Fauquier, including roads for Soldiers' and Sailors' Colony in Shackleton Township .....	75,000
(2) From Fauquier to Grant, including roads for Soldiers' and Sailors' Settlement in O'Brien and Owens Townships .....	75,000
Unforeseen expenditures .....	50,000
All of which is respectfully submitted.	\$525,000

I have the honour to be, Sir,

Your obedient servant.

C. H. FULLERTON,  
*Director, Northern Development Branch,  
Temiskaming District.*

Toronto, October 31st, 1919.



## DEPARTMENT OF LANDS, FORESTS AND MINES—NORTHERN DEVELOP

## COCHRANE

Number	Township	Location (On line between..... from.....to.....)	Cutting	Burning	Stumping	Grubbing	Grading
			L. & W. Ch. Ft.	L. & W. Ch. Ft.	L. & W. Ch. Ft.	L. & W. Ch. Ft.	L. & W. Ch. Ft.
1	Brower .....	Bet. III & IV across 1 & 2.	14x10 80x66	14x10	14x10	14x10	..... 80x24
2	do .....	Bet. 2 & 3 across II to VI, inclusive.....	120x66	.....	.....	.....	114x24
3	do .....	Bet. IV & V across 1, 2 & 3.	40x66	.....	.....	.....	60x24
4	do .....	Bet. II & III " 1, 2 & 3	5x66	.....	5x24	5x24	33x24
5	do .....	Bet. III & IV " 11 & 12 ..	.....	.....	.....	.....	4x30
6	do .....	Bet. 10 & 11 " V & VI ..	.....	.....	.....	.....	.....
7	Calder.....	Bet. VIII & IX " 19 to 28 in- clusive.....	.....	.....	101x30	101x30	.....
8	do .....	Bet. X & XI across 13 to 16 inclusive.....	.....	.....	87½x30	87½x30	.....
9	do .....	Bet. VIII & IX across 1, 2 & 3	.....	.....	50½x30	50½x30	.....
10	do .....	Bet. VIII & IX " 4 & 5.	.....	.....	25½x24	25½x24	.....
11	do .....	Bet. II & III " 1, 2 & 3	.....	.....	25½x24	25½x24	.....
12	Calvert.....	Trunk road Porquis Jct. to Iroquois Falls .....	80x20 51x16	.....	.....	.....	.....
13	do .....	Trunk road Porquis Jct. to Nellie Lake.....	.....	.....	.....	.....	.....
14	do .....	Bet. IV and V across 1, 2 & 3	.....	.....	.....	.....	58x30
15	do .....	Bet. I & II across 9.....	.....	.....	40x33	40x33	.....
16	do .....	Bet. IV and V across 1 & 2 (part).....	.....	.....	.....	10x30	5x30
17	Clergue.....	Trunk road Porquis Jct. to Monteith.....	.....	.....	.....	.....	330x24
18	do .....	Bet. 6 & 7 across II to V in- clusive .....	80x66	.....	.....	80x24	100x24
19	do .....	Bet. III & IV across 5, 6 & 7	.....	.....	.....	.....	.....
20	do .....	Bet. II & III across 6.....	40x66	.....	4½x33	4½x33	.....
21	do .....	Bet. II & III across 2, 3 & 4	.....	.....	79x33	79x33	.....
22	do .....	Bet. IV & V across 1, 2 & 6	120x66	.....	.....	.....	.....
23	do .....	Bet. IV & V across 1 to 6 in- clusive .....	.....	.....	80x30	80x30	.....
24	do .....	Bet. V & VI across 11 & 12	.....	.....	80x24	80x24	126x24
25	Clute .....	Bet. VI & VII across 28.....	.....	.....	33x24	33x24	.....
26	do .....	Bet. IV & V across 26, 27 & 28	.....	.....	.....	38½x33	7x30
27	do .....	Bet. X & XI across parts 27 & 28 .....	.....	.....	.....	.....	.....
28	do .....	Bet. VIII & IX across 26, 27 & 28.....	.....	.....	.....	.....	.....
29	do .....	Bet. X & XI across 28 and along boundary bet. Clute and Calder across Con. X	.....	.....	.....	18x30 11x15	.....
30	do .....	Bet. 18 & 19 across V.....	.....	.....	.....	60½x33	.....
31	Fox .....	Bet. II & III across 7 to 12 inclusive.....	15x66	.....	27½x24	27½x24	.....
32	German .....	Between 11 & 12 across V & VI .....	92x66 1x66	92x66	68x24 6x24	.....	.....

MENT BRANCH—ANNUAL REPORT OF WORK DONE, YEAR 1919  
DISTRICT

Gravelling L. & W. Ch. Ft.	Side- Ditching Ft. Linl.	Off-take Ditching L.&W.&D Ft. Ft. Ft.	Culverts			Bridges			Corduroy L.&W. Ch. Ft.	Repairs Distance Ch.	Number
			No.	Wood Concrete Iron	Size Ft.	No.	Wood Conc. Iron	Len'th Ft.			
.....				.....						3	1
.....	2,244	198x2x2	22	wood	3x3	1	wood	150	.....	175 *	2
.....	2,244	462x3x2	3	wood	3x2	1	wood	50	.....		
.....	1,900					1	wood	100	.....	42 †	3
.....	132		6	wood	3x2				.....	14	4
.....		3,320x3x2							.....		5
.....									.....		6
.....									.....		7
.....	19,982								.....		8
.....	12,754								.....		9
.....	1,500								.....		10
.....	1,300								.....		11
.....	2,772								.....		12
310x8	3,366	.....	7	wood	4x3	.....	.....	.....	.....	400	13
23x8		.....							.....		14
	792	.....	8	wood	3x2	.....	.....	.....	.....		15
.....		.....	1	wood	3x2	.....	.....	.....	.....		16
.....	2,640	.....	27	wood	3x2	2	wood	Reprd. 40	.....	230	17
.....		1980x3x2	6	wood	3x3				.....	240	18
.....	5,280		3	wood	3x2				.....	60	19
.....									.....		20
.....									.....		21
.....									.....		22
.....									.....		23
.....	750	.....							.....		24
.....	2,476	.....	2	wood	3x2				.....		25
.....	4,450	715x3x2							.....		26
.....	987	30x2x2	4	wood	4x3	.....	.....	.....	.....		27
.....	5,726	822x3x2							.....		28
.....									.....		29
.....	3,504	192x3x2							.....		30
.....									.....		31
.....	1,300								.....		32
.....			3	wood	3x2	.....	.....	.....	.....		32

\* 290 ch. x 24 ft. re-graded. † 20 ch. x 24 ft. re-graded.

## DEPARTMENT OF LANDS, FORESTS AND MINES—NORTHERN

YEAR 1919.

COCHRANE

Number	Township	Location (On line between ..... from..... to.....)	Cutting L. & W. Ch. Ft.	Burning L. & W. Ch. Ft.	Stump- ing L. & W. Ch. Ft.	Grubbing L. & W. Ch. Ft.	Grading L. & W. Ch. Ft.
33	Glackmeyer.....	Bet. VI & VII across 12 .....	.....	.....	.....	.....	.....
34	do .....	Bet. IV & V across 15 .....	.....	.....	.....	.....	.....
35	do .....	Bet. 18 & 19 across II to IX .....	.....	.....	.....	.....	.....
36	do .....	Bet. 12 & 13 across I & II .....	.....	.....	.....	.....	.....
37	do .....	Bet. 24 & 25 across VII&VIII .....	127x66	.....	.....	.....	.....
38	Lamarche .....	Bet. 6 & 7 across V .....	.....	.....	.....	.....	.....
39	do .....	Bet. 8 & 9 across V & VI .....	.....	.....	.....	.....	.....
40	do .....	Bet. V & VI across 7 & 8 .....	.....	.....	.....	.....	.....
41	Leitch.....	Bet. IV & V across 1, 2 & 3 .....	.....	.....	.....	.....	.....
42	do .....	Bet. IV & V across 2 .....	.....	25½x33	.....	.....	.....
43	McCart .....	Bet. I & II across 1 to 5 in- clusive .....	58x66	58x66	58x33	58x33	.....
44	do .....	Bet. II & III across 1 & 2 .....	.....	.....	30x30	30x30	.....
					20x15	20x15	.....
					10x7½	10x7½	.....
45	do .....	Bet. I & II across 1 to 4 in- clusive .....	81x66	40x66	62x33	62x33	.....
46	Shackleton.....	From Post Office to Fau- quier Station .....	.....	.....	.....	.....	.....
47	do .....	Trunk road along C.N. Ry..	Scow installed at crossing Groundhog River				
		Boundary Lines.					
48	Blount & Glack- meyer.....	In lots 19 & 23 .....	.....	.....	.....	.....	.....
49	Brower & Fox....	Across Cons. I & II .....	.....	.....	.....	.....	14x30
50	Brower & Kennedy	" Lots 25, 26 & 27....	Ferry over Abitibi River repaired				
51	Calvert & Clergue.	" Lots 1 & 2 .....	.....	.....	20x30	20x30	20x30
52	Calder & Ottoway	" Lots 1 & 2 .....	.....	.....	.....	.....	149x30
53	Clute & Calder....	" Cons. I to XI inclusive .....	.....	.....	.....	.....	.....
54	Clute & Fournier..	" part of lots 14 & 17 .....	.....	.....	.....	.....	.....
55	do .....	" Lots 9, 10 & 11 .....	.....	.....	.....	.....	160x30
56	Clute & Glackmeyer	" Cons. X, XI & XII..	.....	.....	.....	.....	.....
57	Lamarche & Glack- meyer.....	Across Lot 28 .....	.....	.....	.....	.....	.....
58	Lamarche & Four- nier.....	Across Con. VI .....	.....	.....	.....	.....	110x30
59	Lamarche & Glack- meyer.....	Across Lots 1 to 5 inclusive .....	.....	.....	.....	.....	10x30
60	McCart & Calvert and Newmarket.	Aross Con. VI and along T. & N.O. Ry. 231.5 to 233.. Town of Cochrane, 12th Ave.	49x66	49x66	49x33	49x33	.....

ENGLEHART

1	Armstrong .....	Bet. 4 & 5, across V .....	80x66	.....	.....	.....	.....
2	Barr .....	Portage at mouth of Matta- wapika River .....	25x15	25x15	25x15	25x15	25x15
3	Chamberlain.....	Between 10 & 11 across V .....	.....	.....	40x24	.....	160x20
4	do .....	Bet. 10 & 11 across 5 to 10. inclusive .....	80x66	.....	120x24	120x24	160x24
5	do .....	Bet. 8 & 9 across IV .....	40x66	40x66	.....	.....	.....

DEVELOPMENT BRANCH—ANNUAL REPORT OF WORK DONE,

Continued.

DISTRICT—Concluded

Gravelling L. & W. Ch. Ft.	Side- Ditching Ft. Linl.	Offtake Ditching L & W & D. Ft.	Culverts			Bridges			Corduroy L. & W. Ch. Ft.	Repairs Distance Ch.	Number
			No.	Wood Concrete Iron	Size Ft.	No.	Wood Conc. Iron	Length Ft.			
.....	.....	.....	1	wood	.....	1	wood	85	.....	.....	33
.....	.....	.....	.....	wood	.....	1	wood	40	.....	.....	34
.....	.....	.....	1	wood	3x3	1	wood	Reprd	.....	20	35
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	36
10x8	.....	.....	2	.....	.....	2	wood	Reprd	.....	.....	37
59x8	.....	.....	.....	.....	.....	.....	.....	.....	.....	83	38
23x8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	39
.....	950	.....	.....	.....	.....	.....	.....	.....	.....	.....	40
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	41
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	42
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	43
.....	9,840	656x3x2	.....	.....	.....	.....	.....	.....	.....	.....	44
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	45
.....	594	.....	.....	.....	.....	.....	.....	.....	.....	9	46
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	47
.....	.....	.....	.....	.....	.....	1	wood	Reprd	.....	.....	48
.....	.....	.....	2	wood	3x2	1	wood	16	.....	.....	49
.....	3,366	.....	4	wood	3x2	.....	wood	16	.....	20	50
73x8	.....	.....	.....	.....	.....	.....	.....	.....	.....	50	51
.....	11,550	.....	44	wood	3x3	1	wood	100	.....	.....	52
.....	840	.....	.....	.....	.....	.....	.....	.....	.....	.....	53
.....	5,544	3300x4x3	4	wood	3x3	.....	.....	.....	.....	240	54
.....	2,112	.....	9	wood	3x2	1	wood	40	.....	60	55
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	56
54x8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	57
157x8	3,630	.....	1	wood	4x3	1	wood	Repd	.....	.....	58
.....	198	132x6x8	3	wood	3x3	1	wood	40	.....	.....	59
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	60
9x8	11,738	196x4x2	.....	.....	.....	.....	.....	.....	.....	.....	60

DISTRICT

.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
25x15	Ties laid and 12 lb. rails and at each end of tramway a dock was built of hewn timber										2
.....	600x3x2	5	wood	3x2	1	piles	20	.....	.....	.....	3
.....	.....	.....	.....	.....	1	only	24	.....	.....	.....	.....
100x10	600x 3x2	1	wood	5x5	.....	.....	.....	.....	.....	.....	4
.....	.....	1	wood	3x3	.....	.....	.....	.....	.....	.....	.....
.....	.....	8	wood	3x2	.....	.....	.....	.....	.....	.....	5



## DEPARTMENT OF LANDS, FORESTS AND MINES—NORTHERN

YEAR 1919.

ENGLEHART

Number	Township	Location (On line between..... from.....to.....)	Cutting	Burning	Stumping	Grubbing	Grading
			L.&W.	L. & W.	L. & W.	L. & W.	L. & W.
			Ch. Ft.	Ch. Ft.	Ch. Ft.	Ch. Ft.	Ch. Ft.
6	Chamberlain....	Bet. 6 & 7 " IV.....	40x66	40x66	.....	.....	.....
7	do .....	Bet. III & IV " 8 & 9 .....	.....	.....	.....	.....	.....
8	Dack .....	Bet. V & VI " 1 & 2 .....	.....	.....	.....	.....	80x20
9	do .....	Bet. 8 & 9 " II.....	.....	.....	.....	.....	.....
10	do .....	Across Lot 4, Con. IV.....	.....	.....	.....	.....	.....
11	do .....	Bet. 7 & 8 across IV.....	.....	.....	.....	.....	.....
12	do .....	Bet. V & VI " V & VI.....	.....	.....	.....	.....	.....
13	do .....	Bet. 6 & 7 " VI.....	40x66	40x66	80x30	80x24	30x20
14	do .....	On Lot 1, Cons. III & IV.....	(High Falls Hill)	.....	.....	.....	.....
15	do .....	Bet. 8 & 9 across IV.....	40x66	40x66	40x24	40x24	40x20
16	do .....	Bet. 4 & 5 " III and	.....	.....	.....	.....	.....
17	do .....	Bet. III & IV " 5 & 6.....	.....	.....	120x24	120x24	40x20
18	do .....	Across Lot 3, Con. VI.....	.....	.....	40x30	40x24	40x20
19	Evanturel .....	Bet. V & VI on Lot 10 .....	.....	.....	.....	.....	.....
20	do .....	Bet. 2 & 3 across VI .....	.....	.....	40x24	40x20	40x20
21	do .....	Bet. II & III " 7 & 8.....	.....	.....	.....	.....	80x20
22	do .....	Bet. 8 & 9 " V.....	.....	.....	.....	.....	80x24
23	do .....	Bet. IV & V " 8 & 9.....	.....	.....	.....	.....	80x24
24	do .....	Across 1,2,3 & 4 on Con. III	.....	.....	.....	.....	.....
25	do .....	Bet. II & III across Lot 2..	40x66	40x66	40x24	40x24	40x20
26	Ingram .....	Across Lot 12 Con. III.....	.....	.....	.....	.....	.....
27	do .....	Bet. 6 & 7 across II.....	.....	.....	.....	.....	.....
28	Lorrain.....	North Cobalt to Bigelow P.O.	.....	.....	.....	.....	240x20
29	do .....	On Con. II across 12 to 15	.....	.....	.....	.....	.....
		inclusive .....	160x66	.....	.....	.....	.....
30	do .....	Bet. 4 & 5 across XI .....	56½x66	56½x66	.....	.....	.....
31	Marter .....	Bet. III & IV " 6 to 12 in-	.....	.....	.....	.....	.....
		clusive).....	200x66	.....	200x24	200x24	320x20
32	do .....	.....	.....	.....	.....	.....	.....
33	do .....	.....	.....	.....	.....	.....	.....
34	do .....	.....	.....	.....	.....	.....	.....
35	do .....	.....	.....	.....	.....	.....	.....
36	do .....	.....	.....	.....	.....	.....	.....
37	do .....	On Lot 5 Con. I .....	.....	.....	.....	.....	.....
38	do .....	Bet I & II across 10 .....	40x66	40x66	40x24	.....	40x20
39	Marquis .....	On Con. V across 1 to 7 in-	.....	.....	.....	.....	.....
		clusive .....	.....	Road un	finished	.....	.....
40	do .....	Bet. IV & V across 4 & 5..	100x66	.....	.....	.....	.....
41	do .....	Bet. V & VI " 8,9 & 10	135x66	.....	.....	.....	.....
42	Otto.....	On North side Lot 3, Con. V	.....	.....	23x24	.....	.....
43	do .....	Bet. 2 & 3 across V.....	.....	.....	23x24	.....	.....
44	do .....	Bet. IV & V across 2.....	40x66	.....	.....	.....	.....
45	Pacaud.....	Bet. I & II across 5 & 6.....	.....	.....	40x30	40x30	40x20
46	do .....	Bet. II & III " 3 & Bet. 2	.....	.....	.....	.....	.....
		& 3 across III .....	80x66	80x66	.....	.....	.....
47	do .....	Bet. 10 & 11 across VI .....	50x66	.....	.....	.....	.....
48	Robillard .....	Bet. 8 & 9 across V.....	40x66	.....	40x24	.....	.....
49	do .....	Bet. 8 & 9 " IV.....	80x66	80x66	.....	.....	.....
50	Sharp .....	Bet. I & II " 1.....	40x66	40x66	.....	.....	.....
51	do .....	Bet. IV & V " 1,2 & 3 &	.....	.....	.....	.....	.....
		Bet. 2 & 3 " V.....	60x66	160x66	160x24	160x24	160x20
52	Lee & Van Ostrand	White Reserve Road .....	.....	.....	.....	.....	.....

## DEVELOPMENT BRANCH—ANNUAL REPORT OF WORK DONE.

*Continued.*

## DISTRICT—Continued

Gravel- ling L. & W. Ch. Ft.	Side- Ditching Ft. Linl.	Off-take Ditching L. & W. & D Ft. Ft. Ft.	Culverts			Bridges			Corduroy L. & W. Ch. Ft.	Repairs Dis- tance Ch.	Number
			No.	Wood Concrete Iron	Size Ft.	No.	Wood Conc. Iron	Len'th Ft.			
.....	.....	.....	2	wood	3x2	.....	.....	.....	.....	.....	6
.....	.....	3480x3x2	.....	.....	.....	.....	.....	.....	5x10	.....	7
.....	.....	1520x3x2	.....	.....	.....	.....	.....	.....	.....	80	8
.....	.....	.....	1	wood	6x8	.....	.....	.....	.....	.....	9
.....	.....	.....	2	wood	3x2	.....	.....	.....	.....	.....	10
.....	.....	330x3x2	6	wood	3x2	.....	.....	.....	.....	.....	11
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	40	12
.....	.....	.....	3	wood	3x2	.....	.....	.....	.....	.....	13
.....	.....	165x3x2	3	wood	3x2	.....	.....	.....	.....	.....	14
.....	.....	.....	2	wood	3x4	.....	.....	.....	.....	.....	15
.....	.....	.....	1	wood	4x3	.....	.....	.....	.....	.....	16
2½x10	.....	225x3x2	4	wood	3x2	1	Reprd	.....	2½x10	.....	17
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	18
.....	.....	10510x3x2	.....	.....	.....	.....	.....	.....	.....	.....	19
.....	.....	.....	2	wood	3x2	.....	.....	.....	.....	.....	20
.....	.....	1520x3x2	.....	.....	.....	.....	.....	.....	.....	.....	21
.....	.....	3300x3x2	.....	.....	.....	.....	.....	.....	.....	.....	22
.....	.....	2100x3x2	17	wood	3x2	.....	.....	.....	.....	10 miles	23
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	24
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	25
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	26
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	27
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	28
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	29
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	30
9x10	.....	1845x3x2	11	wood	3x2	1	wood	214'	.....	.....	31
.....	.....	.....	3	wood	3x3	2	wood	16'	.....	.....	32
.....	.....	.....	1	wood	8x9	1	wood	20	.....	.....	33
.....	.....	.....	1	wood	6x8	.....	.....	.....	.....	.....	34
.....	.....	.....	1	wood	6x10	.....	.....	.....	.....	.....	35
.....	.....	.....	1	wood	3x5	.....	.....	.....	.....	.....	36
.....	.....	.....	1	wood	5x9	(rebuilt)	.....	.....	.....	.....	37
.....	.....	200x3x2	3	wood	2x3	.....	.....	.....	.....	.....	38
.....	.....	.....	2	wood	3x4	.....	.....	.....	.....	.....	39
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	40
.....	.....	2410x3x2	7	wood	3x2	.....	.....	.....	.....	.....	41
.....	46 chains (cleaned)	600x3x2	5	wood	3x2	.....	.....	.....	.....	.....	42
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	43
.....	.....	250x3x2	3	wood	3x2	1	re-cov.	.....	.....	.....	44
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	45
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	46
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	47
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	48
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	49
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	50
.....	.....	1300x3x2	5	wood	3x2	.....	.....	.....	.....	.....	51
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2 miles	52

DEPARTMENT OF LANDS, FORESTS AND MINES—NORTHERN  
YEAR 1919.  
ENGLEHART

Number	Township	Location (On line between..... from..... to.....)	Cutting L.&W. Ch.Ft.	Burning L.&W. Ch.Ft.	Stumping L.&W. Ch. Ft.	Grubbing L.&W. Ch. Ft.	Grading L.&W. Ch. Ft.
53	Boston, Gauthier & McElroy....	Larder Lake and Huronia Roads .....					240x24
BOUNDARY LINES							
54	Armstrong and.. Beauchamp ...	Boundary across IV & V...					160x24
55	Armstrong and Beauchamp ...	Boundary across V.....	40x66	40x66	40x24	40x24	40x20
56	Chamberlain and Marter.....	Boundary across 1 & 2.....					
57	do .....	" " 11 .....					
58	do .....	" on Con. II.....					
59	Chamberland and Pacaud .....	Boundary across 7,8,9,10&11					
60	Dack & Be'champ	Boundary " 1 & 2.....	80x66	80x66	80x24	80x24	80x20
61	Dack & Evanturel	Boundary " VI.....					80x20

## HEARST

1	Casgrain .....	Bet. 24 & 25 across pts. II & III					
2	do .....	Bet. II & III " "					
		15, 16 & 17 .....					60x22
3	do .....	Bet. 18 & 19 across I, II & III					11x22
4	do .....	Bet. 24 & 25 " IV, V & VI		160x24		160x24	
5	Hanlan .....	Trunk Road across pts 23 to 28 inclusive.....					140x24
6	do .....	Bet. II & III across 16, 17 & 18	74x66			74x24	
7	Kendall.....	Trunk Road East of Hearst					
8	do .....	Bet. 18 & 19 across pt. XII.					
9	do .....	Bet. 24 & 25 " X					120x22
10	do .....	Bet. 24 & 25 " pt. IX..					
11	do .....	Bet. VI & VII " 27, 28 & 29	80x66			80x24	
12	do .....	Bet. V & VI across 27, 28 & 29	76x66				
13	do .....	Bet. 12 & 13 " VIII ..					
14	do .....	Bet. 18 & 19 " IX & pt. X		94x24		94x33	
15	do .....	Bet. VIII & IX across 29...					
16	O'Brien.....	Trunk Road along C.N. Ry.	400' rock approach	to bridges	average 4ft		40x22
17	do .....	Bet. 22 & 23 across XI & XII					40x20
18	do .....	Bet. 10 & 11 .....					27x20
19	do .....	Bet. 24 & 25 across 9 & 10.					20x20
20	do .....	Bet. VIII & IX across 25 & 26				35x33	27x22
21	do .....	Bet. XIV & XV " 19 & 20.					
22	do .....	Bet. X & XI " pt. 25 to 29 inclusive.....	95x66	96x66		95x24	





DEPARTMENT OF LANDS, FORESTS AND MINES—NORTHERN  
YEAR 1919.

HEARST

Number	Township	Location (On line between..... from..... to.....)	Cutting	Burning	Stumping	Grubbing	Grading
			L. & W. Ch. Ft.	L. & W. Ch. Ft.	L. & W. Ch. Ft.	L. & W. Ch. Ft.	L. & W. Ch. Ft.
23	O'Brien .....	Bet. X & XI across pt. 25 to 29 inclusive, and line bet O'Brien and Owens.....					
24	do .....	Bet. VII & IX across 19 to 24 inc. and bet. 18 & 19 across IX.....					
25	do .....	Bet. 18 & 19 across IX & pt. X.....				45x24	
26	do .....	Bet. 7 & 8 across pt. X.....	26x66	26x66		26x33	
27	Owens.....	Trunk Road across 1, 2, 3 & 4.....				40x22	
28	do .....	Bet. 24 & 25 across XV to XVIII inclusive.....					80x22
29	do .....	Bet. XVI & XVII across pt. 24.....	15x66	15x66		15x24	15x22
30	do .....	Bet. XIV & XV across 24 & 25.....					
31	Shackleton .....	Trunk road across Townsite.....	45x66	59x66		59x30	73x24
32	do .....	Trunk " pts. 21, 22 & 23.....					45x24
33	do .....	Bet. 24 & 25 across pts. XI & XII.....	61x66	61x66		61x24	23x24
34	Way.....	Trunk road across 13 to 17 inclusive.....		25x30		123x30	
35	do .....	Trunk Road across 20 at mileage 45 C.N. Ry.....				25x30	
36	do .....	Bet. X & XI across 5 to 8 inclusive.....					60x22
37	do .....	Bet. VIII & IX across 1, 2, 3, 4, 5 & pt. 6.....	129x66			129x24	
38	do and Hanlan	Trunk Road across 1 to 16 inclusive.....					
39	do .....	Bet. II & III across 3, 4 & 5.....	74x66				
40	do .....	Bet. II & III " I & 2.....	49x66				
41	do .....	Bet. X & XI " pt. 8.....					
42	do .....	Bet. X & XI " pts. 7 & 8.....					
43	Williamson.....	Bet. 24 & 25 " I.....					60x22
BOUNDARY LINES							
44	Hanlan & Way..	Diversion at Lake Lot 1 & pt. 2.....					80x22
45	do .....	Across pt. lot 5.....					
46	do .....	" 6 & 7.....				35x24	
47	Kendall & Way ..	" V & VI.....	120x66				
48	Lowther & Way ..	" 9, 10 & 11.....	73x66				
49	O'Brien & Owens	" XII, XIII & XIV.....					40x22
50	do do	" XI.....	40x66	40x66		40x24	
51	Owens & Williams	on " 25 & 26.....					26x22

MATHESON

1	Beatty.....	Bet. II & III across pt. 5, 6 & pt. 7.....		87x66	87x33	87x33	
2	do .....	Bet. 11 & 12 across II.....	80x66	80x66	80x33	80x33	
3	do .....	Bet. " " I.....		80x33	80x33	80x33	
4	do .....	Bet. 9 & 10 " II.....	80x66	80x66	80x33	80x33	
5	do .....	Bet. 9 & 10 " III.....	80x66	80x66	80x33	80x33	
6	Benoit .....	Bet. I & II " 4 to 8 inclusive.....					

## DEVELOPMENT BRANCH—ANNUAL REPORT OF WORK DONE,

*Continued.*

## DISTRICT—Concluded

Gravelling L. & W. Ch. Ft.	Side- Ditching Ft. Linl.	Off-take Ditching L & W & D. Ft. Ft. Ft.	Culverts			Bridges			Corduroy L. & W. Ch. Ft.	Repairs Dis- tance Ch.	Number
			No.	Wood Concrete Iron	Size Ft.	No.	Wood Conc. Iron	Len'th Ft.			
.....	17820	15x4x3	.....	.....	.....	.....	.....	.....	.....	.....	23
.....	23760	30x4x3	.....	.....	.....	.....	.....	.....	.....	.....	24
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	25
.....	7650	309x4x3	6	Temp.	.....	.....	.....	.....	.....	.....	26
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	27
.....	10560	1200x4x3	6	Temp.	.....	.....	.....	.....	.....	.....	28
.....	2000	.....	3	Temp.	.....	.....	.....	.....	800	.....	29
.....	6600	.....	.....	.....	.....	.....	.....	.....	.....	.....	30
.....	200	300x4x3	4	Temp.	.....	.....	.....	.....	.....	.....	31
.....	.....	400x4x3	4	Temp.	.....	.....	.....	.....	.....	.....	32
.....	.....	200x4x3	3	Temp.	.....	.....	.....	.....	.....	.....	33
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	34
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	* 35
.....	.....	3000x4x4	3	Temp.	.....	1	wood	12	.....	$\frac{1}{2}$ mile	36
.....	2000	.....	.....	.....	.....	.....	.....	.....	.....	.....	37
.....	900	1100x4x4	.....	.....	.....	4	wood	16	.....	$\frac{1}{2}$ miles	38
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	39
.....	300	.....	.....	.....	.....	.....	.....	.....	.....	.....	40
.....	1400	.....	.....	.....	.....	.....	.....	.....	.....	.....	41
.....	3000	.....	3	Temp.	.....	.....	.....	.....	.....	.....	42
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	43
.....	.....	100x4x3	3	Temp.	.....	.....	.....	.....	.....	.....	44
.....	.....	2000x4x4	.....	.....	.....	.....	.....	.....	.....	.....	45
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	46
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	47
.....	10460	15x4x3	4	Temp.	.....	.....	.....	.....	.....	.....	48
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	49
.....	3300	1600x4x3	3	Temp.	.....	.....	.....	.....	.....	.....	50
.....	.....	.....	1	wood	6x6	.....	.....	.....	.....	.....	51

## DISTRICT

.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	5
.....	9110	831x2x2	.....	.....	.....	.....	.....	.....	.....	.....	6

\* 50 ft. Ry. Siding.

## DEPARTMENT OF LANDS, FORESTS AND MINES—NORTHERN

YEAR 1919.

MATHESON

Number	Township	Location	Cutting	Burning	Stumping	Grubbing	Grading
		(On line between..... from..... to.....)	L. & W. Ch. Ft.	L. & W. Ch. Ft.	L. & W. Ch. Ft.	L. & W. Ch. Ft.	L. & W. Ch. Ft.
7	Bowman.....	Bet. 6 & 7 across 6 (N. $\frac{1}{2}$ )..	.....	.....	.....	.....	.....
8	do .....	Bet. 4 & 5 S. of Ry. crossing	.....	.....	.....	.....	.....
9	do .....	Bet. 6 & 7 across V & VI...	.....	.....	.....	.....	.....
10	do .....	Bet. 4 & 5 " VI.....	.....	.....	.....	.....	.....
11	do .....	On N $\frac{1}{2}$ Lot 5 Con VI.....	.....	.....	.....	.....	80x24
12	do .....	Bet. III & IV across 3 & 4..	.....	.....	.....	.....	.....
13	do .....	Bet. 2 & 3 across IV (S. $\frac{1}{2}$ )..	.....	.....	.....	.....	4x24
14	do .....	Bet. IV & V " 9, 10 & pt. 8	100x66	80x66	100x33	100x33	.....
15	do .....	Bet 10 & 11 " VI.....	80x66	80x66	80x33	80x33	.....
16	Bond .....	Bet. 2 & 3 across V.....	.....	.....	.....	.....	.....
17	do .....	Bet. II & III across 3.....	18x66	18x66	.....	.....	.....
18	do .....	Bet. 2 & 3 across III.....	50x66	50x66	.....	.....	.....
19	do .....	Bet. 2 & 3 across IV.....	80x66	80x66	.....	.....	.....
20	do .....	Bet. 2 & 3 across V.....	50x66	50x66	.....	.....	.....
21	Carr.....	Trunk Road, R.R. crossing to Wahtaybeg River.....	.....	.....	.....	.....	.....
22	do .....	Bet. II & III across 1 & 2 ..	.....	.....	.....	.....	.....
23	do .....	Bet. 2 & 3 " II.....	.....	.....	.....	.....	.....
24	do .....	Bet. 4 & 5 " I & II.....	.....	.....	.....	.....	.....
25	do .....	Bet. 4 & 5 " V & VI.....	.....	.....	.....	.....	160x24
26	do .....	Bet. V & VI " 5 to 9 in- clusive .....	.....	.....	.....	.....	164x24 80x20
27	do .....	Bet. V & VI across 10 & 11..	80x66	.....	80x33	80x33	.....
28	do .....	Bet. 3 & 4 across I, II & III	.....	.....	.....	.....	.....
29	do .....	Bet. IV & V " 5.....	.....	.....	.....	.....	.....
30	do .....	Bet. 4 & 5 " Con. VI pt.....	.....	20x33	20x33	20x33	.....
31	do .....	Bet. 10 & 11 " II, III & pt. IV.....	130x66 60x66	130x66 60x66	130x33 60x33	130x33 60x33	.....
32	Gorrie.....	Bet. 2 & 3 across VI.....	.....	.....	.....	.....	.....
33	Hislop.....	Bet III & IV " 8.....	.....	.....	.....	.....	.....
34	do .....	Bet. III & IV " 6 to 10 in- clusive .....	200x66	200x66	200x33	200x33	200x24
35	do .....	On Con. I across 6 (Trunk rd)	.....	.....	.....	.....	.....
36	do .....	Bet. V & VI " 10 & 11.....	.....	.....	.....	.....	80x24
37	do .....	Bet. II & III " 12 & 13.....	.....	.....	.....	.....	.....
38	do .....	Bet. 9 & 10 " II & pt. III	.....	120x33	120x33	120x33	.....
39	do .....	Bet. 11 & 12 " IV.....	.....	.....	.....	.....	41x24
40	Playfair.....	Bet. 2 & 3 " V (S. $\frac{1}{2}$ ) ..	.....	20x66	20x33	20x33	.....
41	do .....	Bet. 7 & 8 " VI.....	.....	.....	.....	.....	.....
42	do .....	Bet. V & VI " 9, 10 & 11..	120x66	120x66	120x33	120x33	.....
43	do .....	Bet. V & VI " 7 & 8.....	.....	.....	.....	.....	83x24
44	do .....	Bet. 8 & 9 " VI.....	.....	.....	.....	.....	80x24
45	do .....	Bet. 2 & 3 " VI.....	80x66	80x66	80x33	80x33	.....
46	do .....	Bet. 5 & 6 " V.....	.....	.....	.....	.....	80x24
47	do .....	Bet. 3 & 4 " II.....	40x66	.....	.....	.....	.....
48	do .....	Bet. 3 & 4 " III.....	80x66	.....	80x33	80x33	.....
49	do .....	Bet. IV & V " 6 pt. 7....	.....	.....	.....	.....	22x24
50	Stock .....	Bet. I & II " 6.....	40x66	40x66	.....	.....	.....
51	do .....	Bet. I & II " 5.....	40x66	40x66	.....	.....	.....
52	do .....	Bet. 4 & 5 across V.....	80x66	80x66	80x33	80x33	.....
53	Taylor .....	Trunk Road across III & IV	.....	.....	.....	.....	.....
54	do .....	Bet. 8 & 9 across IV (S. $\frac{1}{2}$ )..	.....	.....	.....	.....	.....

## DEVELOPMENT BRANCH—ANNUAL REPORT OF WORK DONE.

Continued.

## DISTRICT—Continued

Gravelling L. & W. Ch. Ft.	Side- Ditching Ft. Linl.	Off-take Ditching L. & W. Ft. Ft. Ft.	Culverts			Bridges			Corduroy L. & W. Ch. Ft.	Repairs Dis- tance Ch.	Number
			No.	Wood Concrete Iron	Size Ft.	No.	Wood Conc. Iron	Len'th Ft.			
50x8											7
40x8											8
										2 miles	9
										$\frac{1}{2}$ mile	10
										*	11
			2	wood	4x6						12
			3	wood	3x4						
											13
											14
						1	wood	74	(4 acres	cleared)	15
											16
											17
											18
											19
											20
160x8			4	wood	4x4					2 miles	21
80x8											22
80x8											23
120x8										2 miles	24
			10	wood	3x4						25
			2	wood	6x6						
											26
											27
			5	wood	6x10	1	wood	22		3 miles	28
											29
											30
											31
						1	wood	144			32
											33
			1	wood	10x10						34
			16	wood	14x3	1	wood	20			
			1	wood	8x8					12 miles	35
										1 mile	36
											37
											38
											39
											40
						1	wood	58			41
											42
			7	wood	3x4						43
			8	wood	3x4						44
											45
											46
											47
											48
			2	wood	4x4						49
											50
1518											51
			1	wood	3x4						52
			6	wood	4x4	1	wood	25		2 miles	53
										$\frac{1}{4}$ mile	54

\* Old camps removed.



## DEPARTMENT OF LANDS, FORESTS AND MINES—NORTHERN

YEAR 1919.

MATHESON

Number	Township	Location (On line between..... from.....to.....)	Cutting	Burning	Stumping	Grubbing	Grading
			L. & W. Ch. Ft.	L. & W. Ch. Ft.	L. & W. Ch. Ft.	L. & W. Ch. Ft.	L. & W. Ch. Ft.
55	Taylor.....	Bet. IV & V across 12.....					
56	do .....	Bet. 2 & 3 " I & II....	160x66	120x66	120x33	120x33	
57	do .....	Bet III & IV " 1,2,3 & pt.4.....		140x33	140x33	140x33	
58	do .....	On N. $\frac{1}{2}$ Lot 9 Con. V.....					
59	Walker.....	Trunk Rd. across lots 9 & 10.....	82x66	82x66	82x33	82x33	82x20
60	do .....	On N. $\frac{1}{2}$ Con. II Lot 12.....					
61	do .....	Bet. IV & V across 9, 10 & 11.....	120x66	120x66	120x33	120x33	
62	do .....	Bet. IV & V across 12.....					40x24

## BOUNDARY LINES.

63	Beatty & Hislop	Across 4 to 13 inclusive....					
64	do .....	" pt. 8 & 9 & pt. 11.....					
65	Beatty & Carr..	" N. $\frac{1}{2}$ Con. IV.....					
66	Benoit & Cook ..	" 5, 6, 7, 8 & pt. 9.....	20x66		20x33	20x33	
67	Bond & Stock.....	" 1 & 6.....					
68	do .....	" 1 to 6 inclusive.....					
69	Bond & Currie ..	" IV.....					
70	do .....	" III.....	15x66	15x66			
71	do .....	" III & pt. IV.....		130x66	130x33	130x33	
72	do .....	" V & pt. IV.....		50x66	50x33	50x33	
73	Bowman & Carr	" 5 to 12 inclusive....					
74	Bowman & Currie	On Con. V.....					
75	Carr & Taylor..	Across I to IV inclusive....					
76	Clergue & Walker.	" I & S. $\frac{1}{2}$ II.....					
77	Currie & Taylor	" 1 to 12 inclusive.....					
78	Stock & Taylor.	" Con. VI.....					
79	do .....	" " II to VI inclusive					
80	do .....	" " I.....					
81	do .....	" N. $\frac{1}{2}$ II & S. $\frac{1}{2}$ III.....					
82	do .....	" N. $\frac{1}{2}$ IV.....					

## PORCUPINE

1	Mountjoy .....	Trunk Road Timmins to Mattagami.....					
2	do .....	Bet 4 & 5 across pt. II & III.	90x66		170x33	170x33	
3	do .....	Bet. 2 & 3 across IV, V & VI.....		40x30	20x30		40x24
4	do .....	Along river " pts. V & VI.....	75x66	75x66	75x24	75x24	
5	do .....	Bet. 4 & 5 " " III.....	29x66		29x24	29x24	
6	Tisdale .....	S. Porcupine to Davidson Mine.....					
7	do .....	S. Porcupine to Timmins..					
8	Mountjoy & Tisdale	Boundary across III & IV.....					
9	do do	do do V & VI.....	120x66	80x66	80x30	80x30	

## MACADAM

1		Road from Elk Lake to Gowganda.....	120x66	120x66	120x33	120x33	207x20
2		Road from Swastika to Kirkland Lake.....	65x66	6x66	6x33	6x33	151x24

## DEVELOPMENT BRANCH—ANNUAL REPORT OF WORK DONE,

*Concluded.*

## DISTRICT—Concluded

Gravelling L. & W. Ch. Ft.	Side Ditching Ft. Linl.	Off-take Ditching L.W.& D. Ft. Ft. Ft.	Culverts			Bridges			Corduroy L. & W. Ch. Ft.	Repairs Dis- tance Ch.	Number
			No.	Wood Concrete Iron	Size Ft.	No.	Wood Conc. Iron	Len'th Ft.			
40x8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	55
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	56
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	57
.....	.....	1333x2x2	.....	.....	.....	.....	.....	.....	.....	.....	58
.....	.....	.....	5	wood	4x4	.....	.....	.....	.....	.....	59
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	½ mile	60
.....	.....	.....	2	wood	3x4	.....	.....	.....	.....	.....	61
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	62
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	5 miles	63
80x8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	64
20x6	.....	500x3x2½	3	wood	3x4	.....	.....	.....	.....	8 miles	65
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	66
.....	.....	1056x3½x3	1	wood	3x4	2	Repaired	.....	.....	.....	67
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3 miles	68
.....	9073	594x3½x2	2	wood	4x4	1	wood	76x14	.....	.....	69
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	70
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	71
.....	8100	.....	.....	.....	.....	.....	.....	.....	.....	.....	72
.....	.....	.....	.....	.....	.....	1	Repaired	.....	.....	4 miles	73
.....	.....	.....	3	wood	3x4	.....	.....	.....	.....	.....	74
.....	.....	1695x3½x3	5	wood	3x4	.....	.....	.....	.....	4 miles	75
120x8	.....	.....	1	Reprd.	.....	.....	.....	.....	.....	1½ miles	76
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	6 miles	77
80x8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	78
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	5 miles	79
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1 mile	80
80x8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	81
60x8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	82

## DISTRICT

36x8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
.....	9600	1320x3x5	5	wood	3x3	1	wood	40	1000x16	.....	2
.....	.....	.....	.....	.....	.....	.....	.....	.....	4446x16	1 mile	3
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	5
60x80	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	6
20x12	.....	.....	.....	.....	.....	.....	.....	.....	.....	*	7
80x8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	8
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	9

## ROADS

4500	23500	1.5 miles	10 iron 15 Recon'd	.....	.....	.....	.....	.....	11750x10	1
1572	27984x	1.62 "	4 Con. 18" 6 " 24 1 " 30 1 twin 30 3 reconstd	.....	.....	.....	.....	1750	3800x14	2

\* 20 ch. x 12 ft. Rock Sheeting.

† 7 miles repaired.

‡ 4 miles repaired.

REPORT ON THE CONSTRUCTION AND MAINTENANCE OF HIGHWAYS AND BRIDGES  
UNDER THE PROVISIONS OF THE NORTHERN AND NORTH WESTERN  
ONTARIO DEVELOPMENT ACT 1912 AND AMENDMENTS.

(During the Season of 1919.)

*To the Honourable the Minister of Lands and Forests:*

SIR,—I have the honour to submit the following report of work done on the construction and maintenance of roads and bridges under the provisions of the above Acts during the season of 1919:—

Operations were carried on in the Districts of Rainy River, Kenora, Port Arthur and Fort William, Sault Ste. Marie, St. Joseph Island, Algoma, Sudbury, Nipissing, Parry Sound, Muskoka and the Counties of Renfrew and Simcoe.

During the season considerable work was done in the Rainy River Valley; 22 miles of new road were cut out and constructed; during the winter of 1918-19 considerable gravel was hauled for re-surfacing of trunk roads. Several of the trunk roads running north and south into the newly settled townships were extended, and tap drains dug to assist in draining off the swamp lands as well as the roads. On the 1st and 2nd of July last, over 6 inches of rain fell in the two days, causing great damage to the culverts and small bridges and in some instances washing out the roads. This damage had to be repaired and the main trunk roads were constantly dragged throughout the summer when required, and re-surfaced with gravel where they became rutted. There was considerable immigration into this district, and many of the new settlers in the back townships are handicapped for want of roads. The main trunk roads are now in fairly good condition but large expenditures will still be required in this district, to meet the requirements of the incoming settlers.

In the District of Kenora the trunk road between Wabigoon, Dryden, Oxdrift and Vermilion Bay was worked over, re-constructed in places, and surfaced with gravel. In this district there is a pressing want for more roads in the agricultural country between Wabigoon and Dryden on the Canadian Pacific Railway and the Grand Trunk Pacific Railway in the vicinity of Quibell Station. This country is becoming settled up and it will be necessary, in order to retain settlement, to spend considerable money in the construction of new roads.

In the Port Arthur and Fort William Districts large expenditures were made in re-surfacing with gravel the main trunk roads; and also in constructing new roads. The International or Scott highway to Duluth was put into good condition. The construction of a new road running east from Port Arthur towards Loon Lake, Dorion and Nipigon was begun; about 15 miles of this road was partly constructed along the Hydro-Electric transmission line between Port Arthur and the Nipigon River.

On the trunk road between Sault Ste. Marie and Sudbury, considerable work was done. The gap between Algoma Mills and Cutler has been partially completed, and repair work was done between Cutler and Sudbury; and between Algoma Mills and Sault Ste. Marie.

On St. Joseph Island, the work commenced three years ago was continued; and the trunk roads are now in good condition.

In the Sudbury District, new roads were constructed, and roads previously constructed were kept in repair. Considerable expenditure was made in the

mining district around West Shining Tree, to meet the requirements of mine owners, who are now beginning to develop the gold mines in that district. Several miles of new road were also constructed to accommodate the settlers in the out-lying townships. The trunk road between Sudbury and North Bay was kept in fairly good condition; large quantities of gravel and crushed rock were used in re-surfacing this road in the worst places; the road was frequently dragged. A new road was constructed between Warren on the Canadian Pacific Railway, south to the Village of St. Charles. The old road between Rutter Station on the Toronto Branch of the Canadian Pacific Railway, running east about 20 miles to Lake Nipissing, was partly re-constructed and graded.

The trunk road between North Bay and Mattawa was re-graded and re-surfaced in places, and continued east of Mattawa towards Chalk River. Between Pembroke and Petawawa, the road was kept in repair; and between Chalk River and Mattawa, about 25 miles of the old Pembroke and Mattawa Road was widened and re-graded. On the trunk road from North Bay, south to Bracebridge, a large expenditure was made in reconstruction, and in diverting the old road where it was found necessary in order to improve the grades. The worst parts of this road have been completed as far south as Washago. On the old road running west from Trout Creek Station on the Grand Trunk Railway, towards Commanda, construction was commenced, and about 12 miles partly completed. The road running west from Powassan to Nipissing Village was continued.

The following is a more detailed statement of the different roads constructed and repaired in the various districts during the season; and appended to this report is a statement of the expenditures and an approximate estimate of the amounts which will be required to construct and maintain roads during the season of 1920.

I have the honour to be, Sir,

Your obedient servant,

J. F. WHITSON,  
*Commissioner.*

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## DISTRICTS OF PARRY SOUND AND MUSKOKA.

### *Trunk Road from Callander, South:*

Work was continued on this road throughout the winter of 1918-19. Several of the worst parts of the road, where gravel could not be procured conveniently during the summer season, were surfaced with gravel; more particularly in the vicinity of Barriedale, Burk's Falls, Katrine, and Huntsville. The work was also continued throughout the summer season up to the end of October. Over 40,000 cubic yards of gravel were used in re-surfacing this road. From Callander to Powassan the road was dragged at different times throughout the season when required. Between Novar Station, on the Grand Trunk Railway, and Huntsville, a diversion of 5 miles was made along the right-of-way of the Grand Trunk Railway, southerly from Novar Station, to avoid very heavy grades on the old road running west and south from Novar. The new road as now constructed and gravelled is a great improvement; there are very few grades on it, and the length



of the road has also been cut down considerably. The road is now in fairly good condition for automobile traffic over this section, which was considered one of the worst sections on the road between North Bay and Bracebridge. From Utterson the road was diverted westerly to strike the Parry Sound road north of Beatrice; and from the diversion, the road extended southerly, passing through Falkenburg. In this section, the old road was widened, ditched, graded and gravelled in places. From Novar north to Burk's Falls, the road was gravelled in places, graded and ditched; more particularly in the section near Katrine, where there was a bad section, extending over 7 miles. North and south of Burk's Falls, the road was re-constructed in places and graveled. At Sundridge a large stone culvert was constructed, and north of South River Station a bridge was built across the South River, with a span of 47 ft., with stone abutments; and a second bridge, over Black Creek, a tributary of the South River, was constructed with stone abutments, with a span of 23 ft. A stone bridge was also built over a small creek with a deep valley, at the new diversion north of Melissa Station. Immediately north of Huntsville, several small diversions and rock cuts were made, and considerable surfacing with gravel done. The road between Bracebridge and North Bay is now in fairly passable condition for automobile traffic, although there still requires considerable surfacing to be done with gravel. North of the diversion of the trunk road with the Parry Sound road, north of Beatrice, a rock cut was made near the Skeleton Hill, along the shore of a small lake. This has greatly improved the grade on the road from Rosseau to Bracebridge. It will take a considerable expenditure during the season of 1920 on this road, more particularly between Novar and Bracebridge, to put the road into good condition.

Between Bracebridge and Gravenhurst, no work was done on the trunk road during this season. It was found, however, that south of Gravenhurst near the Severn River and Washago, the old road, which had been built many years ago, had become badly rutted for want of attention. In this section, extending a distance of over 6 miles, operations were started in September from Severn Bridge, southerly through the village of Washago. The road was regraded, widened in places and brushed out; about  $11\frac{1}{2}$  miles of the road was re-surfaced with crushed rock and gravel. Owing to the wet season, this road was not completed, and the work has since been continued, re-surfacing with crushed rock.

## DISTRICT OF PARRY SOUND.

### *Nipissing Road:*

Between Powassan Station on the Grand Trunk Railway north-westerly to Nipissing Village, a distance of about 10 miles, which was graded two years ago and gravelled in places, was resurfaced in the worst places, 2,000 cubic yards of gravel being used. This work was performed during the winter season. Throughout the summer the road was dragged and kept in fairly good condition. This road is part of the Powassan and Restoule Road it extends westerly for a distance of over 40 miles, it is one of the oldest roads in the district. West of Nipissing the road was in bad condition; it passes through a country which has been settled for over 25 years. The country is broken and rocky, but in places there is a very fine agricultural land with fairly prosperous settlers. These settlers have no other access to the railway but by this particular road. An exploration was made of

the road and it was found that immediately west of Nipissing village there was a very bad grade, rocky and almost impossible to go up or down with heavy loads. A diversion was made to the north to avoid the heavy grade. The road has been cut out and it is hoped that next season the Department will be in a position to finish the road and continue the work as far west as Restoule. Three small bridges with stone abutments have been constructed near Nipissing village, across a branch of the South River.

*Trout Creek and Loring Road:*

This road follows the old colonization or timber road constructed in the early days of settlement in the district. It is the only road from the village of Loring, Golden Valley settlement and the village of Commanda, by which the



Entering the town of Mattawa, on the Trunk Road, District of Nipissing.

settlers can reach the railway. The road passes through a typical Parry Sound country, broken and rocky in places, with sections of good land in the valleys. In some sections, more particularly that immediately west of Trout Creek Station, the soil is a light sandy loam or sand. This class of country extends westerly for about 5 miles. The old road constructed many years ago and mostly repaired by settlers, was in bad condition; very little attention had been paid to drainage or grading. The road has been widened, ditched and graded for a distance of about 8 miles, where it ended in a rough, rocky, hilly section and where a diversion had to be made for a distance of 5 miles to the north, along the valley of a small stream. On this new road a fairly good grade was found; the road has been cut out and grubbed and is now ready for grading as far as the village of Commanda. This diversion leaves the old road about 8 miles west of Trout Creek Station and touches the old road again at the village of Commanda, beyond which

no new work has been done upon the old road. West of Commanda to Loring the road passes through Golden Valley, in which there is a good settlement of fairly prosperous farmers, the land in many places being first class. In other sections the road passes through a rocky sparsely settled country where the road will have to be diverted in some instances, in order to better the grades. This country has been settled in places for the last 40 years and the only access to the railway, for these settlers, is along this road. At the present time it is a difficult matter for the settlers to reach a market except during the winter season. The first 8 miles of the road, commencing at Trout Creek Station, has been well graded and gravelled in places; 21 iron culverts and 6 wooden culverts were placed. Several of the hills were cut down to improve the grade. The hills on both sides of the South River bridge were cut down and the grade very much improved. Owing to the wet season unfortunately we were unable to complete the gravelling of some sections of the road and this will require to be done later on.

#### *Distress Road:*

On the main road from Sundridge to Magnetawan village a diversion was made around what is locally known as "Distress Hill"; 1 mile of new road was cut out and gravelled, in order to improve the grade. The old road passes over a rocky hill which it was found impossible to cut down. Over 1,000 yards of gravel were used in surfacing this road.

#### *Townships of Conger and Freeman:*

The road from Parry Sound, running south to Lake Joseph and Lake Muskoka was extended from Gordon Bay, along the Canadian Pacific and Canadian Northern Railways to Foote Bay, a distance of about 5 miles, through the townships of Conger and Freeman. This road connected with a fairly good automobile road from Foote Bay to Bala, a summer resort on Muskoka Lake. The road followed had been cut out several years ago, but was grown up and unused, except during the winter season. The road was cut out, widened and stumped ready for grading. It passes through a comparatively level country, with no bad grades and, when completed, will give the citizens of the town of Parry Sound and villages along the railway access to the summer resorts in the Muskoka Lake country. It will also assist the settlers in getting to a market for their produce. The road requires to be graded and ditched.

The total amount expended on the trunk road, and other roads in the Districts of Parry Sound and Muskoka during the season was \$144,043.33.

### DISTRICT OF NIPISSING.

#### *Mattawa-Klock Road:*

The old travelled road known as the Mattawa and Pembroke road commencing about 3 miles east of the Town of Mattawa and extending east for a distance of over 12 miles, was widened, ditched and graded to a point about 2 miles east of Klock Station on the C.P.R. On this road 5 corrugated iron culverts, 10 wooden culverts and 6 stone culverts were placed. The road was well ditched and graded, 1 bridge was repaired, 1,433 cu. yds. of gravel were used in resurfacing the worst parts of the road. Between the eastern terminus of this work and the western end of the work performed west of Chalk River there is a long section of road which will require considerable repairing and grading. It is part of the old timber



road and although it is passable for cars during the dry season it is unsuitable for traffic during the early spring or late in the fall of the year; it will require brushing out, grading and surfacing with gravel in places.

*Callander-Mattawa Road:*

This road was constructed by this Branch in 1913 and 1914. During the interval some repair work was done in places by this Branch, but little or nothing by the settlers along the road. There is considerable traffic over the road and it



View on the Pembroke and Petawawa Trunk Road.

became badly rutted in places. The distance between Callander and Mattawa is about 40 miles. The road was re-graded throughout its entire length this season; some of the worst grades cut down; the road widened in places and re-surfaced with gravel where required; the ditches were deepened and cleaned out and several new culverts placed. The road is now in fairly good condition, although there are still some parts of the road which will require re-surfacing with gravel later on.



*North Bay-Trout Lake Road:*

Between North Bay and Trout Lake Mills about 2 miles of this road were re-graded and ditched in places and 1 mile re-surfaced with gravel, but owing to wet weather in October the road was not finished.



A view of the Trunk Road between the town of Pembroke and Petawawa Military Camp, showing a stone road re-surfaced with coarse gravel.

*Township of Ferris Road:*

The road from North Bay to Trout Lake south side was repaired and part re-surfaced with gravel.

*Trunk Road from North Bay to Callander:*

This road was re-surfaced with gravel, 2,200 cu. yds. gravel being used.

*North Bay to Sudbury Trunk Road:*

This road was dragged and repaired throughout its entire length, 80 miles between the Towns of Sudbury and North Bay; in places it was re-surfaced with gravel. East and west of Meadowside 3,070 cubic yards of gravel were hauled by train from a point on the Canadian Pacific Railway west of Sudbury from the Canadian Pacific Railway pit at Phelan. North of the Village of Markstay, 1,055 cubic yards of gravel were used in re-surfacing  $1\frac{1}{2}$  miles of the road leading into the village.

In the Townships of Kilpatrick and Caldwell, east of the Village of Verner, about  $3\frac{1}{2}$  miles of the road were re-surfaced, 2,205 yards of gravel being used. In sections west of Sturgeon Falls the road was also re-surfaced where it had become rough, 900 cubic yards of gravel and 1,203 cubic yards of stone being used. Several culverts and small bridges were repaired. Between the Town of Sudbury and the Village of Coniston a stone road was constructed about four years ago. The road was re-surfaced with crushed rock in places for a distance of six miles, and with coarse gravel for two miles; 1,435 cubic yards of crushed rock and 600 yards of gravel were used; five corrugated iron culverts were placed and the road was well rolled with 12 ton roller and is now in first class condition. The bridge across the Veuve River, about three miles west of Warren Station on the Canadian Pacific Railway, which was commenced last season, was completed. The bridge has a clear span of 60 feet with stone abutments; 500 cubic yards of rock were used in filling in these abutments.

In the vicinity of Meadowside, where the country is very flat, ditches had to be deepened and five iron culverts were used to assist in the drainage. The road between Sudbury and North Bay is now in fairly good condition, although there are still places which will require gravelling; more particularly in that portion between Sturgeon Falls and Meadowside.

The amount expended on the above work during the season was \$69,484.31.

## COUNTY OF RENFREW.

*Trunk Road, Mattawa to Pembroke:*

*Between Pembroke and Petawawa and Chalk River to Bissett's Creek.*—The trunk road between the Town of Pembroke and the Petawawa Military Reserve, in length about 12 miles, which was constructed a few years ago, was placed under a foreman, with a small gang of from 3 to 5 men and from 1 to 2 teams; who were engaged throughout the season commencing about the 1st June in improving and maintaining this road. The road was continually dragged when required, and new gravel was spread on the road wherever it became rutted. In places, the road was widened where necessary, and the ditches deepened. Over this road there is a very heavy traffic. This system of constantly keeping the roads in repair was found very satisfactory on this particular road; and throughout the entire season the road was in splendid condition.

Twenty miles of this road were brushed out and ditched, and 15 miles graded; 44 corrugated iron culverts, 8 stone culverts and several wooden culverts were placed; 1 cedar bridge with 14 ft. opening and stone abutments was built, with 300 yds. of rock filling; 1 stone culvert bridge 44 ft. wide and 7 ft. high was constructed across Barr's Creek, with walls on each side 120 ft. long, 20 ft. wide

and 31½ ft. high; also 1 culvert 6½ miles west of Chalk River with rock fill 100 ft. long, 12 ft. wide and 31½ ft. high. This road was well ditched and surfaced with gravel in the worst places. It passes through a country that has been sparsely settled for over 50 years. The road as now constructed, was originally built and known as the Pembroke and Mattawa Road; and was used by the lumbermen for transporting supplies from Pembroke west to Mattawa during the



The Interprovincial Bridge crossing the Ottawa River at the Joachim Rapids, near the Trunk Road from Pembroke to Mattawa.

early sixties. The land along this road is a light sandy loam, stoney and rocky in places; and while there are sections with fairly good agricultural land, taking the country as a whole, it is not very well suited for agricultural purposes. There is, however, considerable traffic on this road during the winter season in taking supplies from Pembroke west to Deux Joachin, where there is an interprovincial iron bridge spanning the Ottawa River; and from this bridge northward through



Quebec Province there is a timber road extending for 100 miles or more through the pine and spruce forests. The work as performed this season extended as far west as the branch road leading to the interprovincial bridge, which is distant only a few miles from our trunk road. From about the same point, the road branches southerly a few miles to Moore Lake Station on the Canadian Pacific Railway. This branch road to the station was brushed out, grubbed in places, and the worst grades cut down. This station is where the settlers along the trunk road within a reasonable distance market their supplies. The road from Chalk River west, passes in places over sandy plains, grown up with a thick second growth of pine and other timber, which even now have a commercial value. The road passes in sight of the Ottawa River throughout a good portion of its length, and the scenery is very fine. At present there is considerable automobile traffic



On the banks of the Ottawa River, near the Interprovincial Bridge, between Ontario and Quebec, across the Joachim Rapids; one of the most noted transporting points in the early days of lumbering in the Ottawa Valley.

between Mattawa and Pembroke, although the road west of where our work terminated and Klock Station, is almost impassable in places. This road was repaired in places in the vicinity of Bisset Station, where it was cut out and widened for a distance of 6 miles and in the vicinity of Adelard Station, 5 miles of the road were brushed out, and 3 miles stumped and stoned, ready for grading.

The expenditure on this work during the season amounted to \$24,421.55.

#### DISTRICT OF SUDBURY.

##### *Garson to Coniston Road:*

This road was cut out and graded 3 years ago. There was considerable heavy traffic over the road between the Mond Nickel Company's smelters at Coniston and the Company's mines at the village of Garson, the distance being a little over



5 miles. This road was all well surfaced with crushed rock, over 5,000 cubic yards of rock being placed thereon, and well rolled with a 12-ton roller and surfaced in places with gravel, of which 1,067 yards were used. Several corrugated iron culverts were placed and the road is now in good condition.

*Sudbury to Garson Village:*

This road was constructed 7 years ago. A diversion, however, was made on the road a few years ago, but never surfaced. This diversion reduced the distance and grades considerably; 3,729 cubic yards of crushed rock were used on this road and 1,200 yards of gravel, the road being well rolled and corrugated iron culverts placed where required, and a bridge, with an 18-ft. span, built on lot 12, con. 6, township of Neelon. This bridge was constructed with stone abutments. The road between Sudbury and Garson is now in good condition.

*Sudbury to Hammer:*

The road between Sudbury and Hammer, which was constructed 7 years ago, became badly rutted, as the municipalities along the road have taken little or no interest in maintaining it. The road was re-graded and ditched in places and surfaced with gravel and slag from the mines, 2,044 cubic yards of slag and 219 yards of gravel being used. The repairs along this road extended for a distance of 8 miles.

*Hammer to Capreol Road:*

A few steep hills were cut down and the road was repaired and re-ditched and parts surfaced with gravel, 414 cubic yards of gravel being used. This road was constructed about 7 years ago and became badly rutted in places, owing to the fact that little or no repair work has been done by the settlers along the road.

*Sudbury to Azilda Road:*

This road was repaired and dragged for a distance of 6 miles, 400 cubic yards of gravel being used.

*Coppercliff to Creighton Road:*

This road was dragged for 6 miles and repaired for 3 miles. Upwards of 500 cubic yards of gravel were used in repairs. It is now in first class condition.

*Warren to St. Charles Road:*

Between Warren Station on the Canadian Pacific Railway and the village of St. Charles, the distance is about  $9\frac{1}{2}$  miles, and between these two villages the old road was, in many places, almost impassable for traffic during the spring and fall seasons. Along this road there is a good settlement, more particularly in the vicinity of the village of St. Charles, and a great deal of farm produce passed over the road. The road required grading, ditching and widening and the grades had to be cut down;  $9\frac{1}{2}$  miles of the road were graded and about 5 miles were surfaced with gravel. Corrugated iron culverts were placed, where necessary, and 6 large wooden culverts repaired or re-built. A small wooden bridge was re-constructed and the road is now in very fair condition.

*MacFarlane Lake Road:*

Part of this road between con. 6 and 7, Township of Dill was reconstructed, graded and gravelled for  $3\frac{1}{4}$  mile, and in the Township of Broder the road was repaired for 3 miles, graded for  $3\frac{1}{4}$  miles and gravelled for  $2\frac{1}{2}$  miles; 2 small bridges were repaired and 22 iron culverts placed.



A view of the International or Scott Highway between Fort William and Pigeon River, showing road surfaced with shale and gravel.

*Richard Lake Road (A branch of the Sudbury and MacFarlane Lake Road):*

This road was brushed out, graded and repaired for  $2\frac{1}{2}$  miles; 6 culverts were repaired and 5 new culverts placed; also 1 wooden bridge repaired; the road was gravelled in places where required.

*Townships of Balfour and Dowling:*

The road along the town line between these townships was cut, brushed, cleared and stumped for 1 mile; and ditched for 2 miles and culverts repaired.

*Wahnapitae Road:*

Between Garson and Wahnapitae Lake, for a distance of 6 miles, the road was repaired and surfaced with gravel in some places.



A view looking south on the International or Scott Highway, showing the mountain ranges overlooking Lake Superior.

*Rutter-Noelville Road:*

This road commenced at a point on the Sudbury and Toronto Branch Canadian Pacific Railway at Rutter Station and extends easterly for 20 miles to the west arm of Lake Nipissing. The old road has been in use for nearly 20 years: it passes through, in places, first-class agricultural land, it being one of the best

farming sections in that district. The country is fairly level, the soil is of clay and clay loam, broken in places with rocky ridges; but on the whole, the country is well adapted for agricultural purposes and there is a prosperous settlement along the road. The road in many places has never been graded. Work was commenced early in September on the worst part of the road, which is within  $11\frac{1}{2}$  miles of Canadian Pacific Railway, where the country is very rocky, more particularly at the crossing of the Murdock Creek. This portion of the road was improved, and on each side of the bridge for a considerable distance was well graded and the rock cut down; the crossing is now in first-class condition. About  $4\frac{1}{2}$  miles of the road was graded and 2 miles re-surfaced with gravel; 17 new culverts were put in and over 1,200 cubic yards gravel used. The road requires considerable expenditure yet. The only outlet the settlers have in this district is by Rutter Station in the summer and winter seasons, or by boat across Lake Nipissing in the summer season. There is a large section of fine agricultural land tributary to this road and I would advise further expenditure in the way of grading and gravelling.

*Larchwood to Levack:*

This road was graded and repaired for a distance of 2 miles.

*Shining Tree Road:*

This road leaves the Canadian National Railway at Westree Station, 73 miles north of Sudbury, and runs in easterly and north-easterly direction to West Shining Tree Lake and Wasapika Lake. The distance to West Shining Tree Lake is about 23 miles and Wasapika Lake 28 miles. The road as far as West Shining Lake was cut out 6 years ago and the first 16 miles graded and corduroyed in places. No repairs were done during the interval, and the road was badly broken up. During the last 2 seasons there has been considerable heavy traffic over the road by the miners taking in mining machinery and supplies. The road passes through a country that is heavily timbered with Jack Pine, Spruce, Poplar and other timber; the road is comparatively level with very few bad grades; the soil is either light sandy loam, sand, or gravel, until within a few miles of West Shining Tree Lake where the country becomes rocky. There are a few good gravel pits along the road but road making material in some places is difficult to procure. The road has been regraded and ditched in places; new culverts have been constructed and about 8 miles re-surfaced with good gravel; the road to West Shining Tree is now in fairly good condition; beyond that point to Wasapika Lake it requires stumping and grading and in places widening. From all appearances, judging from the amount of work that has been carried on in this mining district during the past season, there are good prospects of the district making a mining camp. Several Mining Companies have done considerable work on their properties this season, and a few of them have put in small plants, and the indications are that there will be considerable activity in this gold mining district in the near future. All of their machinery and supplies will pass over this road.

*St. Charles to Hagar Road:*

A winter road was cut out between the townships of Dunnet and Appleby, south of the Canadian Pacific Railway to connect the village of St. Charles with the Canadian Pacific Railway at Hagar Station. A few hills were cut down, and



grades improved. This road will require to be improved in order to make it fit for summer traffic.

The total amount expended on the above work during the season was \$122,763.94.

SAULT STE. MARIE-SUDBURY TRUNK ROAD, AND WORK IN THE DISTRICT OF ALGOMA,  
IN THE VICINITY OF SAULT STE. MARIE.

*Sault Ste. Marie-Sudbury Trunk Road, Algoma to Cutler:*

Work was commenced in June on the gap, 19 miles in length, between Algoma and Cutler. This portion lies in difficult country from a construction standpoint, being rough and rocky with numerous swamps.

Three camps were installed, one working east from Algoma, one west from Cutler and a double camp working in both directions from Spragge.

At the end of the season 11 miles had been completed, of which 6 were gravelled. Of the remainder, 5 miles were partially completed so as to be passable, but still requiring a considerable amount of work, including one rock cut of 400 yds. and 3 smaller ones, drainage and the installation of some permanent culverts. Three miles lying along the Serpent River remain to be built.

The section was in general built to a width of 24 ft., reduced to 20 ft. on cuts and fills. Grades have been with three exceptions, kept below 8 per cent., these three being 10 per cent. Sharp turns have been avoided and a good view obtained.

Seventy corrugated metal culverts were installed during the season, the majority of these being bedded in concrete to prevent heaving. One 6 ft. x 6 ft. concrete culvert, 32 ft. long was built at Foz Creek, and one 8 ft. concrete arch 65 ft. long at Shephard's Creek. Four stone culverts were also built. There remain on the ground to be installed, 20 corrugated metal culverts.

During the season a stone crushing plant was authorized, but delivery was not obtained until late in the season. A re-built tractor sent with the outfit was not sufficiently powerful and was replaced with a new machine. This plant has been installed at Shephard's Creek where there is a rock slide of over one hundred thousand tons of naturally broken trap unweathered and of the right size for the crusher. Quarry costs are thus almost eliminated. The same conditions obtain at a number of other points between Sault Ste. Marie and Sudbury. Owing to the lateness of the season only a test run was made with the plant. But six weeks running in the spring will supply the material for that part of the newly constructed road, for which no gravel is available. After that the plant can be moved to different points as required.

In addition to the three miles uncompleted and the five miles partially completed there remains to be built during the coming season, three small reinforced concrete bridges of 18 ft. span.

With a sufficiently early start this section can be opened for traffic early in July of next year.

*Sault Ste. Marie to Algoma Mills:*

This portion of the road, 102 miles in length, is under charge of a maintenance overseer and has been continually patrolled and kept in repair. In addition to maintenance betterments are being made. During the season, in addition

to steady dragging, 4,000 yds. of gravel were spread on a total distance of 28 miles. Two thousand tons of trap rock from Bruce Mines Quarry were used for repair purposes. Twenty culverts were installed and 8 miles of the road were brushed out. Ditches were cleaned out where necessary, and new outlets built.

*Sudbury to Cutler:*

This part of the road, 82 miles in length, required considerable work. During the season, 27 miles, between Copper Cliff and Nairn, were repaired and gravelled in places.

Between Webbwood and Espanola, a section, which has always given considerable trouble, 3 large washouts were filled and other repairs made.



A view showing the Hearst Range of mountains, rising over 1,000 feet along the International or Scott Highway, overlooking Lake Superior.

Between Webbwood and Massey one mile of gravel was laid and repairs made. Between Walford and Massey,  $3\frac{1}{2}$  miles were re-graded and gravelled, together with one mile of outlet ditching and some miscellaneous repairs.

Ten culverts in all were installed.

*St. Joseph Island:*

Operations were carried on during the winter months in hauling gravel on to roads, which had been graded the previous season, and as soon as the spring opened up the roads previously constructed were gone over with the road drag, and operations carried on throughout the season. Operations were chiefly confined to the A line, across lots 19 to 25; on the line between lots 5 and 6, across Concessions P, Q, R and S; between lots 10 and 11, across Concessions N, O and P;

on the U line, across lots 10 to 15 and lots 21 to 23; on the D line, across lot 5 and across lots 17 to 21; on side roads 20 and 21, across Concessions 13 and 14. Besides re-ditching and re-grading parts of these roads, necessary culverts were placed. The roads now constructed connect the two main shipping points or villages on the island, Richard's Landing and Hilton; and give access from the main settlements on the island to these villages. The roads on the island are now in good condition. They will, of course, require to be maintained and extended as settlement progresses. During the season over 15,000 cu. yds. of gravel were used in re-surfacing these roads. The roads were all well dragged during the summer season, as necessity required and are now in good condition.

Between the villages of Hilton and Richard's Landing, both of which are situated on the north shore of the island, the road runs north across Campement D'Ours Island to a point opposite Kensington Point on the main land. The passage is made by means of a scow ferry. From Kensington, there is a road connecting with the Sault Ste. Marie-Sudbury Trunk Road at Desbarats Station on the Canadian Pacific Railway. This is a road, however, on which a considerable amount of repair work is necessary. The work outlined has been practically completed, with the exception of a few short roads on the island, and a cut at the north end of the Campement D'Ours Road, work on which has been suspended, owing to the weather conditions this fall. On St. Joseph Island and approaches \$22,248.67 has been expended during the season of 1919.

#### *Goulais Bay Road:*

The Goulais Bay Road runs northerly from Sault Ste. Marie to the settlement of Goulais Bay and thence to Bellevue on the Algoma Central Railway. One and a half miles were graded and one mile gravelled. Also on an alternative location to the biggest hill on the road with a grade of 20 per cent., which had been cleared in 1917, work was started. This involved a cut of about 4,000 yds., with a corresponding fill, giving a final grade of 8 per cent. This work, when about half done, had to be suspended on account of unfavourable weather conditions.

#### *Rydal Bank Road:*

On this road, running northerly from the Town of Bruce Mines, through the Village of Rydal Bank, and thence to Ophir and McFee's Valley, a considerable amount of work was done during this season.

Between Bruce Mines and Rydal Bank  $\frac{3}{4}$  of a mile of road was re-graded and  $1\frac{1}{4}$  miles of gravel spread. Three culverts were repaired.

Between Rydal Bank and Ophir  $\frac{1}{2}$  mile of new road was graded and  $1\frac{3}{4}$  miles of gravel laid.

On the McFee's Valley portion  $\frac{3}{4}$  of a mile of gravel was laid.

#### *Wharencliffe Road:*

This road runs northerly from the Village of Little Rapids to the Wharencliffe Settlement, near Mississauga River. The northerly portion, in particular, is extremely rough and at certain seasons almost impassable. It was intended to cut down and improve some of the worst hills and re-grade and drain some of the worst of the other portions. Owing to difficulty in obtaining sufficient labour, this being restricted to the settlers themselves, the programme for the season was



not carried out. Three-quarters of a mile was re-graded and gravelled. Three bridges and some culverts were repaired and re-covered, the cutting down of one of the worst hills partially done.

*Bellevue-Searchmont Survey:*

On instructions from the Department, during November, a survey and preliminary location of a road near the Algoma Central Railway, from Bellevue to Searchmont was made.

The greater portion of this Sault Ste. Marie work was carried on in charge of Mr. John L. Lang, Civil Engineer; the total cost, including the St. Joseph Island operations above referred to, amounted during the year to \$162,937.68.

DISTRICT OF THUNDER BAY.

IN THE VICINITY OF PORT ARTHUR AND FORT WILLIAM.

*International or Scott Highway:*

Work was commenced on this highway early in April. Several landslides had occurred along the steep mountains adjacent to the road, more particularly at a point known as the Horn Hill; in many instances the old ditches along the foot of the mountain were filled up, and had to be cleaned out and the road widened. In some places it was found necessary to re-surface the road with gravel or shale; 13,700 cu. yds. of gravel or shale rock were used for this purpose, from the international boundary at Pigeon River, north for 25 miles to the Slate River Valley. This road was also dragged several times, or after every rainfall, and kept in first-class condition; 15 new culverts were built where it was found necessary, and all the ditches were opened up or cleaned out; the road was left in first-class condition last fall.

Over this road there is now a large tourist traffic; no less than 17,000 people are reported to have crossed to and from Minnesota, Duluth and Minneapolis during the season. It has become one of the most popular tourist roads between Ontario and the United States in the western parts of the Province. The cities of Port Arthur and Fort William are now deriving a great benefit from this road, besides the settlers along the route. It is a road, however, that will require two small working gangs of 4 or 5 men each and a few teams, dragging and gravelling the road during the summer season; as there are no organized municipalities along the southern 30 miles of this road to maintain it, and very few settlers. There is considerable fine agricultural land along the road, which in a few years may be settled upon; the soil is a heavy clay, admirably adapted to the growth of clover and alsike seed.

*Townships of O'Connor and Marks:*

Graded road between Concessions 2 and 3, across lots 1 and 2, Township of Marks; and across lots 12, 11, 10, 9, 8 and 7, and through lots 6, 5 and 4 and location Y, Concessions 1 and 2, Township of O'Connor, to the Silver Mountain Road; 6 miles more or less. This road was repaired, hills cut down, ditched and graded.



*Township of Conmee:*

Brushed out, grubbed, ditched and graded the road between lots A and 1, across Concessions 1 and 2 and south part of 3,  $2\frac{1}{2}$  miles; and westerly along the line between Concessions 2 and 3, across lots E, D, C, B, A, 1, 2, 3, and 4,  $4\frac{1}{2}$  miles to Hume Station. On this road, hills were cut down, culverts repaired, and the worst places gravelled; two small bridges and 5 culverts were built.



On the International or Scott Highway, showing the remains of the original Pine Forests West of Lake Superior.

*Township of McIntyre, Oliver Road:*

This road was dragged and re-graded from the Grand Trunk Pacific Railway crossing in the Township of McIntyre west to Murillo Station on the Canadian Pacific Railway, a distance of 6 miles; 4,322 cu. yds. of gravel were used in the re-surfacing of this road. The road is now in first-class condition between Port

Arthur and Kakabeka Falls, a distance of about 20 miles, the road drag having been used upon it whenever required during the summer season.

*Township of Gorham:*

The road between lots 14 and 15 across Concessions 1, 2 and 3, and between lots 16 and 17 across Concession 4, 4 miles were re-graded, gravelled and repaired; 17 culverts were placed and 2 bridges repaired, 900 cu. yds. of gravel being used in re-surfacing. The road between lots 6 and 7, across Concessions 1, 2 and 3 was repaired; and across Concessions 4 and 5 was graded  $1\frac{3}{4}$  miles. The road between Concessions 2 and 3 across lots 1, 2, 3 and 4, 2 miles, was widened, graded and repaired. Between lots 10 and 11 across Concession 4 and the south quarter of Concession 5, the road was grubbed, graded and repaired  $1\frac{1}{4}$  miles.



The first automobile to pass over the International or Scott Highway, crossing the Pigeon River at low water.

*Gorham and McGregor Townline:*

On the townline between the Townships of Gorham and McGregor, across part of Concession 1 and Concessions 2 and 3, the road was repaired and re-graded  $2\frac{1}{2}$  miles.

*Gorham and McIntyre Townline:*

On the townline between the Townships of Gorham and McIntyre, the road across Sections 8, 7, 6 and 5 was cut out for a winter road, 4 miles.

*Township of Ware:*

Across the north part of lot 19, Concession 2; across lot 19, Concessions 3 and 4; across lot 20, Concessions 4, 5 and the south half of 6; the road was



cut out, graded and repaired; 4 culverts were built, and 4 small bridges repaired. Between Concessions 3 and 4, across lots 4 to 7, the road was cross-layed for 1,300 ft., and cut out  $1\frac{1}{2}$  miles for a winter road.

#### *Township of Gillies:*

*Silver Mountain Road.*—This road from Hymers to South Gillies was re-graded for 2 miles between lots 6 and 7 across parts of Concessions, 4, 5 and 6; a new diversion road was constructed around the hill on Concession 3, a distance of 1 mile; 1,300 cu. yds. of gravel were used in re-surfacing this road. The road from Stanley to Hymers was gravelled for a distance of  $4\frac{1}{2}$  miles, 3,209 cu. yds. of gravel being used. This road connects Hymers and Gillies with the Twin Cities.



The inspector visiting a typical log school-house on the International or Scott Highway.

#### *Township of Neebing:*

*Industrial or Prison Farm Diversion.*—This road was cut out, grubbed and graded  $3\frac{1}{2}$  miles, and gravelled  $\frac{3}{4}$  mile; a bridge was built over the mouth of a creek flowing into Kaministiquia River, with steel girders 45 ft. span, and stone and concrete abutments; 3 culverts were placed.

#### *Township of Paipoonge:*

Grubbed and graded diversion road west of Stanley Junction, connecting with Arthur Street Road to Fort William and Kakabeka Falls, between lots 34 and 35, Concession 1, and across the south half of lot 13, and across lots 14 and 15, Concession 1, to Stanley Junction, a distance of 1 mile.

*Township of Pearson:*

Road between lots 6 and 7, Concession 5 was repaired, old crosslay removed, and the road covered with clay, for a distance of  $\frac{1}{4}$  mile.

*Arthur Street Road:*

This road was repaired from a point  $\frac{1}{2}$  mile west of the Canadian Pacific Railway crossing, west to Kelly Hill, 5 miles; the road was re-graded and gravelled in places.

*Schreiber:*

Repaired bridge with new stringers, flooring and railing.



On the Oliver Trunk Road west of Port Arthur; road surfaced with shale.

*White River:*

Made rock fill across narrows in small lake about  $1\frac{1}{2}$  miles north of White River Station along the Canadian Pacific Railway water line; filled 125 ft. long, with 15 ft. opening; also constructed diversion around hill at south end of fill.

*Port Arthur and Loon Lake Road:*

This road commences at the eastern limit of the City of Port Arthur near the Pumping Station, close to the line of the Canadian Northern Railway, and extends easterly along the old Black Bay Road, which was cut out and partly graded many years ago. It follows the Black Bay Road for about 9 miles. This road almost parallels the Canadian Northern right-of-way on the north side; it also follows along the Hydro-Electric pole line between Port Arthur and the water power on the Nipigon River. The road now being constructed extends



in an easterly direction from the end of the old travelled road, crossing the Mackenzie River about  $\frac{1}{4}$  mile north of the Canadian Northern Railway, and continues easterly to a point a few miles south-west of Sibley Station on the said railway. Operations ceased about the end of October at this point. The western part, or old travelled portion of the road, was widened in places and surfaced with gravel; from the end of the old travelled road, a new road was cut out, grubbed and graded; preparations were made for the erection of a bridge across the Mackenzie River. The road after it passes Mackenzie River, extends through fairly good agricultural country, although the soil is light and sandy. The country is an old brule, grown up with second growth poplar, birch, spruce, etc.; this area has been burnt over several times. From Sibley Station, the projected road extends along the edge of the Hydro-Electric pole line to Loon Lake Station on



A view on the Trunk Road from Kakabeka to Hymers, south-west of Fort William.

the Canadian Pacific Railway. At this point there is a large summer resort; thence the road follows in an easterly direction almost parallel to the Canadian Pacific Railway, until it reaches the agricultural section east and west of Dorion. Fourteen miles of this road were operated upon last season; about 4,000 cu. yds. of gravel were used in re-surfacing the road; several culverts were constructed. This road when completed will give access to all the fine summer resorts along the shores of Thunder Bay, Black Bay, Nipigon Bay, Nipigon River and Loon Lake; and will open up a large section of agricultural land in the Townships of Dorion, Stirling and Nipigon; and give access to the splendid water powers of Nipigon River. For some time to come, however, the benefits to be derived are more in the opening up of the agricultural section east and west of Dorion Station in the above named townships.

The total amount expended in this district during the season was \$107,877.55.

## KEXORA DISTRICT.

Number of miles of new roads brushed out, grubbed and graded .....	17
“ “ new roads partly graded .....	4
“ “ old roads burned .....	10
“ “ old roads repaired .....	15
“ “ old roads gravelled .....	21
“ corrugated iron culverts built .....	58
“ wooden culverts built .....	35
“ new bridges constructed .....	14
“ old bridges repaired .....	1

During the season of 1918 the trunk road between the Town of Dryden (Canadian Pacific Railway) and Oxdrift Station, a distance of 7 miles, was ditched and graded, but not gravelled. During the months of February and March,



A view along the Trunk Road through the Slate River Valley, south-west of Fort William.

1919, the greater portion of this road was re-surfaced with gravel, 3,800 cu. yds. being used, operations ceasing on the breaking up of sleighing. This work ceased near Oxdrift Station. Early in May, operations were again started, and the gravel was spread to proper grade, and the work of grading, ditching and re-locating continued westerly along the trunk road as far as Eagle River Station. The work consisted of cutting out and widening the road, cutting down hills to proper grade, building culverts, grading and diverting the road where it was found necessary, in order to avoid steep hills. The road is now well ditched and graded, but will require considerable gravel in places, before it will meet the requirements of heavy traffic during the wet seasons. In this section of the road, 32 corrugated iron culverts were placed; 15 wooden culverts and 3 small bridges constructed. Two swamps in Eton Township,  $1\frac{1}{2}$  miles in width, were corduroyed

and ditched on both sides, besides two offtake ditches dug, one nearly a mile in length and the other 800 ft. The distance from Oxdrift Station to Eagle River Station is 10 miles, through a splendid farming country.

While operations were being carried out to the west of Dryden, a camp was operating east of Dryden, about  $1\frac{1}{2}$  miles west of Wabigoon Station. The work consisted of burning off the brush on the road which was cut out the previous



A typical view of a road cut out and newly graded through the virgin forest; near Wabigoon, District of Kenora.

season, stumping, grubbing, ditching, grading and gravelling. The road is now completed through to Wabigoon, well graded, ditched and surfaced with gravel. Twenty-six corrugated iron culverts, 17 wooden culverts and 4 stone culverts were placed; and the following 6 bridges were constructed: No. 1 bridge, 75 ft. long, 8 ft. high; No. 2, 300 ft. long, 30 ft. high; No. 3, 65 ft. long, 12 ft. high; No. 4, 45 ft. long, 10 ft. high; No. 5, 36 ft. long, 8 ft. high; No. 6, 36 ft. long,



8 ft. high. These bridges are all constructed of red pine, and painted. There is now a first class gravel road between Dryden and Wabigoon, a distance of 13 miles.

Between Wabigoon and Eagle River the road passes through, in most instances, a first class farming country. The soil is chiefly clay or clay loam. The farmers are making good progress in this vicinity, judging from the large clearings and



Gravelling a new road between Dryden and Wabigoon, in the District of Kenora.

good buildings. The country appears to be best adapted for the growth of clover and alsike seed, and hundreds of acres are to be seen along the road. All classes of farm produce are grown in this District very successfully. There are still, however, thousands of acres of fine land in this Section open for settlement, or, at least, uncultivated and apparently not settled on.



*Trunk Road, Vermilion Bay (Canadian Pacific Railway) North to Quibell Station  
(Grand Trunk Pacific Railway).*

This road was constructed a few years ago, and had become badly cut up in places, owing to the heavy traffic, and required considerable repairs. The old ditches were cleaned out and deepened, 10 new culverts were placed, and one small bridge constructed. Four miles of the road were re-surfaced with gravel and 4 miles partly repaired, commencing at Vermilion Bay, going north. Owing to the wet weather, however, it was impossible to finish the work; and there remain 2 miles of the road south of Quibell badly in need of gravelling. At this point there is little or no gravel to be found, and it would be advisable to have this work completed during the winter months when the gravel could be drawn much more cheaply. The distance between Canadian Pacific Railway and Grand Trunk Pacific Railway is 10 miles.



Settler's home, Kenora District.

In the vicinity of Quibell, in the Townships of Wabigoon and Redvers, there is a section of fine agricultural land, with settlements of well-to-do farmers. The settlers, however, are badly handicapped for want of roads. Owing to the difficulty of procuring labour this summer, we did not succeed in constructing the miles of roads in this section of the country that were laid out for the season's work. During the early part of the season the farmers were all busily engaged on their farm work, and during the latter part of the season wet weather retarded the road work. This section of country, between Wabigoon and Eagle River is well adapted for the growth of timothy, clover and alsike. Large quantities of seed are grown here every year.

*Aubrey Township:*

One and a half miles of road were grubbed between lots 10 and 11, Concession 6, near Minitaki Station; and a wooden bridge 96 ft. long constructed across Beaver Creek.

*Pellatt Township:*

Keewatin and Pellatt Trunk Road. This road, constructed a few years ago, became badly rutted in places, and was repaired where required, re-graded in places, 4 new culverts placed, ditches cleaned out and 540 yds. of gravel used in re-surfacing the worst parts.

*Kenora and Keewatin Trunk Road:*

This road was repaired, several dangerous places along the road were widened out and 444 loads of crushed rock were used in re-surfacing the worst parts of the road. The road is now in good condition.



A typical view of a settler's garden near Oxdrift, in the Wabigoon section,  
District of Kenora.

*Winnipeg River Bridge:*

Owing to the heavy rains during the first week in July, the waters of the Lake of the Woods rose extremely high, and caused a considerable washout at the east abutment of the steel bridge crossing the west branch of the Winnipeg River. The bridge was constructed about 18 years ago. The approach to the eastern abutment was a dry stone wall about 33 ft. high and 80 ft. long. The wall was built with very little batter, and was held together by rods of iron passing through the roadbed and bolted to timbers. The timbers rotted, and owing to the extremely high water, the entire wall slid out into the river, thus stopping communication between the two towns. A new wall was constructed 100 ft. long, well pointed with cement, and is now in first class condition.

*Kenora to Redditt Station Survey:*

An exploration survey was made with a view to locating a trunk road between Kenora and Redditt Station on the Grand Trunk Pacific Railway. First, a route

was explored on the East Melick trunk road to Redditt. This passed through a broken, rocky country, unsuitable for agricultural purposes in most instances, and difficult and expensive to build. The second route explored followed the West Melick trunk road, which is graded as far as lot 12, Concession 4, Township of Melick. This route was found somewhat more satisfactory than the East Melick trunk road, although it passes through a country with a comparatively small percentage of land suitable for agricultural purposes. In some instances, the country is very rocky, and a road very difficult to construct. It was found, however, that a road could be constructed connecting Redditt Station with Kenora by this route, opening up a fair percentage of agricultural land, which road might, in the future, be extended westward along the Grand Trunk Pacific Railway to connect with Minaki on the Winnipeg River.

\$52,092.48 was expended on the roads in this district during the season of 1919.



A view on the Trunk Road in the Rainy River Valley.

### DISTRICT OF RAINY RIVER.

Number of miles of new roads cleared .....	22.5
“ “ old roads brushed .....	19.
“ “ roads grubbed .....	27.
“ “ new roads graded .....	16.
“ “ old roads re-graded .....	42.
“ “ roads gravelled .....	45.
“ culverts built .....	76
“ culverts repaired .....	30
“ bridges built .....	9
“ bridges repaired .....	5
“ iron pipes laid .....	2
“ miles of tap drains dug .....	4.5
“ “ road ditches dug .....	19.
“ “ corduroy laid .....	2.
Amount expended .....	\$137,102 26



*Township of McIrvine:*

The road north of Section 31 was graded for 1 mile and the brush cut on the sides and tap drains cleaned out.

*Township of Crozier:*

The Trunk Road was gravelled north of Sections 13, 14 and 15 for a distance of  $2\frac{1}{2}$  miles. The Trunk Road east of Section 21 was gravelled for  $\frac{3}{4}$  mile. On road between Sections 18 and 19, one mile of road was grubbed, and  $\frac{1}{2}$  mile ditched and graded, new. Between Sections 17 and 18,  $\frac{3}{4}$  mile of road was cleared and stumped. On road north of Sections 34, 35 and 26, 2 miles of road was partly re-graded.



All kinds of garden produce flourish in the District of Kenora near Dryden.

*Township of Woodyatt:*

On River Road across river lots 13 to 43, 2 miles of road were gravelled by contract, 1,570 yards of gravel being used. Two and a half miles of this road were re-graded. A pile bridge, span 40 ft., was built on River Road between lots 15 and 16, and approaches filled 100 ft. Two washouts repaired on road between lots 32 and 33. Two hundred feet of filling put in at bridge between Sections 8 and 9, and 1 washout repaired on Little Fork, LaVallee Road. Two pile culverts, span 10 ft., were built on river road and 2 culverts on road between river lots 32 and 33.

*Township of Devlin:*

North of Sections 17 and 18, one mile of road was gravelled, and north of Section 18, 80 rods of ditch dug on one side of road; also, 2 culverts built north of Section 18 and 1 north of Section 17. North of Sections 3, 4, 5 and 6, 2 miles of road were re-graded, and north of Sections 4, 5, and 6,  $2\frac{1}{2}$  miles of road were gravelled by contract, 1,422 yds. of gravel being used. Two culverts built north of Section 30, and 1 north of Section 29, and 1 mile of Trunk Road



gravelled east of Section 29. On road east of Sections 27, and 34,  $1\frac{1}{2}$  miles of road were re-graded and  $1\frac{1}{4}$  miles of the above road were gravelled by contract, 1,037 yds. of gravel being used. One-quarter mile of Trunk Road was gravelled north of Sections 29 and 30. Six hundred feet of road were gravelled north of Section 21. On road between Sections 19 and 30,  $\frac{1}{2}$  mile of road was cleared.

#### *Township of Burriss:*

On road east of lot 5, across Con. 3, 4, and 5,  $1\frac{1}{2}$  miles of road were re-graded. Two pile bridges with a span of 12 ft. were built between lots 10 and 11. Concession 1, and approaches filled in, a distance of 450 ft. at each bridge. Road across lots 5, 6, 7 and 8, between Concessions 5 and 6, 2 miles of road re-graded. One-quarter mile re-graded between lots 6 and 7, Concession 6. One and a half miles of road re-graded across lots 10, 11, and 12, Concessions 2 and 3. On road between lots 4 and 5, Concession 1,  $\frac{3}{4}$  mile of road was gravelled and re-graded



Clover everywhere in the neighbourhood of Wabigoon and Dryden.

by contract, 600 yds. of gravel being used. Between lots 4 and 5, across Concessions 3, 4 and 5, 3 miles of road were gravelled by contract, 1,704 yds. of gravel being used. On road across lots 11 and 12 between Concessions 2 and 3,  $\frac{3}{4}$  mile of road was gravelled by contract, 331 yds. of gravel being used.

#### *Township of Lash:*

Two culverts built north of Section 26, and 2 tap drains 100 ft. in length built. On road running east and west on the north side of Emo Village,  $\frac{1}{4}$  mile of road was re-graded. On river lot 38, bridge and trunk road were repaired. On road between Sections 24 and 25,  $\frac{1}{2}$  mile of road was cleared, and twenty rods ditched. North of Sections 25, 26, 27 and 28, 2 miles of trunk road were re-gravelled. On road between Sections 32 and 33, a culvert was built and 600 ft. tap drain dug, and on trunk road south of Section 32, 700 ft. of ditch were deepened. On road between Sections 34 and 35,  $\frac{1}{2}$  mile of road was gravelled.

*Township of Aylsworth:*

On road between river lots 32 and 33, 38 rods re-graded and  $\frac{3}{4}$  mile gravelled. On river road across river lots 31, 32 and 37, 48 rods of road gravelled. On river road across river lots 30 and 31, 20 rods of road gravelled.

*Township of Barwick:*

One culvert built on trunk road between river lots 8 and 9. A bridge was built on road east of river lot 1, span 16 ft. On trunk road, river lot 35, a bridge was repaired. A culvert was built on trunk road on river lot 37.



Hundreds of acres of red clover and alsike are grown between Wabigoon and Eagle River, District of Kenora.

*Township of Nelles:*

On the road between Sections 4 and 5, and between Sections 5 and 8,  $1 \frac{2}{3}$  miles of road were gravelled. On road allowance between Sections 4 and 5,  $\frac{1}{2}$  mile road grubbed. On road between Sections 16 and 17,  $\frac{1}{2}$  mile of road graded. On road allowance between Sections 4 and 9, 70 chains ditches, and 10 chains of tap ditch dug, and  $\frac{3}{4}$  mile of road cleared. On road between Sections 16 and 17, and between Sections 8 and 9,  $\frac{1}{3}$  mile of road gravelled. On road between Sections 2 and 3, 10 and 11, 14 and 15, and 22 and 23,  $2 \frac{3}{4}$  miles of road ditched, on one side,  $\frac{1}{2}$  mile double ditched, and  $3 \frac{1}{2}$  miles re-graded. One mile of said road was grubbed on the sides and 2 culverts built; and on road between Sections 22 and 23, 10 chains of washout repaired. On road between Sections 26 and 27, and between 34 and 35, 2 miles of road re-graded..

*Township of Shenston:*

Cleared 147 rods road allowance around rock ridge, north of Section 35. Shenston Township. On road north of Sections 35 and 36, 280 rods of road grubbed, and 257 rods ditched and graded, and 112 rods corduroyed, 30 rods of



tap drain dug on Sections 34 and 35. On road between Sections 21 and 28, 32 rods of ditch dug. On road between Sections 26 and 27, 85 rods of road ditched, and 85 rods graded. One culvert built between lots 33 and 28. On road east of Sections 3, 10 and 15,  $2\frac{1}{2}$  miles of road cleared but not burned.

#### *Township of Dilke:*

Two culverts were built between Sections 32 and 33. North of Sections 35 and 36, the road was gravelled for a distance of  $1\frac{3}{4}$  miles. Two culverts repaired on trunk road on river lots 32 and 41, and on trunk road across river lots 23 to 26,  $\frac{1}{2}$  mile of road gravelled.



A typical view of a splendid field of red clover near Wabigoon.

#### *Township of Dobie:*

On road east of lot 1, Concession 6, 1 mile of road re-graded, and brush burnt. Four culverts built, east of lot 1, on Concessions 1, 3, 4 and 6. On trunk road commencing at the S.E. corner of lot 12, Concession 1, thence easterly, 3 miles of road gravelled, 1,720 cu. yds. of gravel being used.

#### *Township of Kingsford:*

Four culverts built west of lot 12, Concession 1, and 2 on Concession 2. Four miles of road graded west of lot 12, Concessions 1, 3, 4, 5 and 6. On west town line across Concessions 3, 4, 5 and 6,  $3\frac{1}{2}$  miles of road brushed. On Concession 6, 202 rods of road brushed, and on Concession 4, 163 rods gravelled, and on Concession 2, 25 rods gravelled.

#### *Townships of Potts:*

Two and a half miles of road were grubbed and part brushed between lots 2 and 3, across Concessions 3, 4 and 5. Twenty-five rods corduroy were laid between lots 2 and 3, Concession 2, and bridge was built on lot 1. On road

between lots 8 and 9, Concessions 1 and 2, 174 rods of road gravelled, 456 rods ditched, 109 rods grubbed, 422 rods graded, 2 bridges and 7 culverts built, 195 rods of corduroy laid and 135 rods tap drain dug. Cut and cleared road allowance between lots 8 and 9, Concession 3, south half, and between Concessions 2 and 3, across lots 7 and 8,  $1\frac{1}{2}$  miles.

*Township of Carpenter:*

On road between lots 2 and 3, Concession 2, 35 rods corduroy were laid and bridge repaired. On road east of lot 1, Concession 3, 1 culvert was built and washouts filled in. On road east of lot 7, Concession 5, 200 rods of old road were re-graded and brushed, and 400 rods gravelled, and 6 rods tap drain dug. Bridge was repaired on road across lots 2 and 3, Concession 2. On road between lots



A view in the town of Dryden, District of Kenora, showing the pulp and paper mill.

6 and 7, 233 rods of road were ditched on Concession 4, and  $\frac{1}{2}$  mile gravelled and  $\frac{1}{4}$  mile of road grubbed and graded on Concession 6 and 2 culverts built.

*Township of Mather:*

On road between lots 6 and 7, Concessions 5 and 6, 1 mile of road was re-graded, and 80 rods grubbed and cleared, on the sides. On road between lots 8 and 9, Concessions 5 and 6, 27 rods of road were ditched, and on Concession 3, 33 rods.

*Township of Richardson:*

On road between lots 2 and 3, Concession 1, 1 mile was brushed, 20 rods of tap drain dug, 60 rods of road graded, 20 rods of road grubbed, and 3 culverts



built. On road between Concessions 1 and 2, across lots 11 and 12, 148 rods were cleared. On road across lots 8, 9 and 10, between Concessions 1 and 2,  $1\frac{1}{2}$  miles of road were brushed. On road across lots 7 to 12,  $2\frac{1}{2}$  miles of road were grubbed. On road across lots 5 to 12, 3 miles of road were graded, and 95 rods of tap drain dug. On road across lots 5 and 6, between Concessions 1 and 2, 2,764 ft. of corduroy were laid and  $\frac{1}{4}$  of a mile gravelled. A bridge having a span of 11 ft. was built on lot 5, between Concessions 1 and 2, and 4 culverts were put in. Between lots 4 and 5, Concessions 1 and 2, 2 culverts were repaired.

*Long Sault Reserve:*

On trunk road 5 miles were re-graded, 2 miles gravelled, 1,000 yds. of gravel being used, and 2 culverts repaired. On road between lots 44 and 45, the clearing, burning and grubbing was completed for 1 mile.



A garden and clover field near Dryden.

*Township of Pattullo:*

On road east of Sections 21, 28 and 33, 3 miles of road were re-graded, 110 rods of corduroy laid and 1 mile ditched.

*Dobie-Shenston and Mather-Tait Town Line Road:*

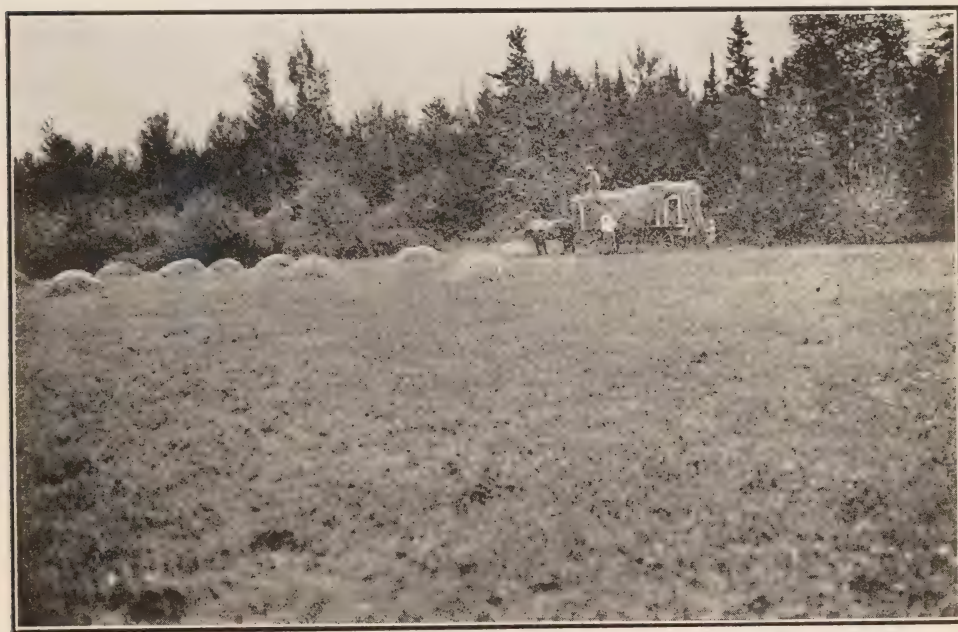
One and two-third miles of town line road were re-gravelled where washouts had damaged same, and 69 rods ditched, 2 culverts repaired, 3 new culverts built, and 25 rods re-graded. Cut and cleared road allowance east of Sections 3, 10 and 15,  $1\frac{1}{2}$  miles.

*Township of Tait:*

The approaches to bridges between Sections 22 and 23 were filled to a distance of 135 yds. On road between Sections 15 and 16, 103 yds. of road were graded. On road between Sections 15 and 16, a culvert was built. On road south of Section 4, 100 rods of ditch were dug. Two culverts were repaired on road between Sections 9 and 16, and 1 culvert between Sections 8 and 17 and 1 between lots 23 and 26. On road between Sections 9 and 10, 49 rods were graded, and between Sections 23 and 26, 23 rods.

*Township of Atwood:*

A culvert was built on trunk road on lot 2, and 400 ft. of trunk road gravelled across river lots 20 to 23. Two corrugated iron pipes were put in on the trunk



A "new beginner"; a settler in the Wabigoon section taking off a crop of clover.

road at the Atwood and Worthington town line. On trunk road across river lots 17 and 18,  $\frac{1}{4}$  mile of road was gravelled. On east side of Atwood and Worthington town line, commencing at trunk road and from there south, 1,420 ft., a ditch was dug to carry surplus water from the ditches to the north of the railway.

*Township of Curran:*

A culvert was built on road east of river lot 24, and  $\frac{1}{4}$  mile of road gravelled; also, a culvert built on road east of Section 9.

*Wild Lands Reserve:*

Two new culverts were built on Spohn Trunk road east of Section 21, and 2 washouts repaired east of Sections 29, 21, 13 and 5, and 4 miles of road gravelled by contract, 4,298 yds. of gravel being used. Three and a half miles of this road were brushed and burned on sides. On road north of Section 53,  $\frac{1}{4}$  mile of road was cleared, and  $\frac{1}{4}$  mile grubbed. On road north of Sections 4 and 5, 2 miles of road were cleared and grubbed. On road commencing at the S.E. corner of Section 44, thence south of Sections 44, 43, 42 and 41, to road allowance on the shore of the Rainy River, thence north-westerly along said road allowance to the west boundary of Section 41, thence north on road allowance west of Sections 41, 33, 25 and 17, to the north-west corner of Section 17, 8 miles; this road allowance was cleared and grubbed by contract. On road allowance between Sections 41 and 42 and between Sections 33 and 41, 2 miles of road were cleared.



One of the many splendid farms in the Dryden section of the District of Kenora, viewed from the Trunk Road.

*Manitou Reserve:*

On trunk road, 3 miles were re-graded,  $1\frac{1}{2}$  miles gravelled, 949 yds. of gravel being used, and 3 culverts repaired.

*Township of Spohn:*

On road between lots 4 and 5, Concession 5,  $1\frac{1}{2}$  miles of road were ditched, and across Concessions 3 to 9 inclusive, 7 miles re-graded, and across Concessions 4, 5 and 6, 2 miles re-gravelled. On road between Concessions 7 and 8, across lots 7 and 8, 1 mile of road was cleared and the centre 12 ft. grubbed. Across the centre of lots 11 to 14, Concession 3, for a distance of  $2\frac{1}{4}$  miles, a clearance was made, 33 ft. wide and a tap drain dug. On road allowance between Concessions 8 and 9, 2 miles of road were cleared.



*Township of Morley:*

On road north of Section 20 and 21, 2 miles of road were gravelled by contract, 1,547 yds. of gravel being used.

*Township of Pratt:*

On road between lots 4 and 5, across Concessions 5 and 6, and north of Concession 6, across lots 3 and 4, 3 miles of road were gravelled by contract, 5,741 cu. yds. of gravel being used.



The Fort Frances and Rainy River Trunk Road, east of Barwick, showing part of a flock of 700 sheep.

*Township of McCrosson:*

On road between lots 2 and 3, across Concessions 1, 2 and 3,  $2\frac{1}{2}$  miles were gravelled. On road between lots 2 and 3, Concession 3, and across lots 1 and 2, between Concessions 3 and 4, and east of lot 1 on town line Concessions 4 and 5,  $3\frac{1}{2}$  miles of road were brushed, logged and grubbed and 7,300 ft. tap drain dug, 9 culverts built and  $\frac{1}{2}$  mile double ditched, and 1,100 ft. single ditched, and  $2\frac{3}{4}$  miles graded. On road between Concessions 2 and 3, across lots 1 and 2, 1 mile of road brushed,  $\frac{1}{2}$  mile grubbed, double ditched, 1 mile graded and 3 culverts built.

*Township of Tovell:*

On road between Concessions 2 and 3, across lots 8, 9, 10, 11 and 12,  $2\frac{1}{2}$  miles of road were brushed out and grubbed, and 2 miles partly graded, 1 mile double ditched and  $1\frac{1}{4}$  miles single ditched, 4 new culverts built.



*Township of Blue:*

On road between Sections 8 and 17, 170 rods were graded, and a ditch dug on each side of road, 2 culverts built and 4 repaired; 60 rods of road repaired between Sections 20 and 11.

*Township of Worthington:*

On road between river lots 40 and 41 a bridge was repaired, and between Section 34 and lot 16, 6 culverts were repaired, and on the trunk road, on river lot 11, a culvert was built.

The trunk road was kept dragged from Rainy River to Fort Frances, a distance of 60 miles. The Rainy River-Spohn road was dragged 15 miles; the Sleeman-Bergland road was dragged 18 miles; the Barwick-Black Hawk road 12 miles and the Emo-Off Lake road 7 miles.

At Tracey Rapids on the Seine River about 4½ miles west of Atikokan Station, Canadian Northern Railway, a bridge was constructed in March and April. The bridge is 145 ft. long, with one rock filled pier 12 x 16, one 18 x 18, with a 50 ft. opening; one 16 x 18, with a 27 ft. opening; with an abutment, filled with rock, on the south side 7 ft. high, 20 ft. wide and 25 ft. long. Between this bridge and the Canadian Northern Railway, a road ½ mile in length was cut, grubbed and graded.

J. F. WHITSON,  
*Commissioner.*

*To the Honourable the Minister of Lands and Forests:—*

SIR,—I beg to submit for your consideration and recommendation that the following amounts be expended during the season of 1920 on the construction of new roads and bridges, the maintenance of previously constructed trunk roads, the re-grading and re-surfacing with stone or gravel of old roads, the drainage of swamps, and the construction of tap drains in the Districts of Rainy River, Kenora, Port Arthur, Fort William, Algoma, Sudbury, Nipissing, Parry Sound, Muskoka, Manitoulin Island, and County of Renfrew.

*District of Rainy River:*

In this District there are approximately 150 miles of trunk roads constructed or re-constructed during the last seven years which require to be maintained. In places they require constant dragging, ditches and culverts require to be kept open, and occasionally parts of the road require re-gravelling. In several of the townships from 10 to 20 miles north of the C. N. Railway, settlement has taken place during the last five or six years and many of these settlers have little or no access to a market, except by winter roads, and in consequence the settlers have been badly handicapped, therefore, it is necessary that new roads be constructed through these townships, connecting them with the trunk roads already built. In some instances trunk roads have been constructed north leading into these townships, which will require to be extended and the worst parts of the roads surfaced with gravel. For this purpose I would recommend the expenditure of ..... \$70,000

*District of Kenora:*

For repairing and maintaining old roads north and west of the Towns of Kenora and Keewatin, for the gravelling of the trunk road already constructed between Oxdrift and Eagle River Station along the C. P. Railway, for the construction of new roads in the townships adjacent to Quibell Station on the G. T. Railway, for the gravelling of sections on the trunk road between Vermilion Bay on the C. P. Railway and Quibell Station on the G. T. Railway, for repairing the road between Dryden Station on the C. P. Railway and Richan Station on the G. T. Railway; also to defray the expense of survey and exploration of new roads in the districts north and west of Kenora ..... 75,000

*Districts of Port Arthur and Fort William:*

For the maintenance of 175 miles of trunk roads in the district north, east, west and south of the Towns of Port Arthur and Fort William, extending southerly to Pigeon River, westerly to the Kaministiquia River, and northerly and westerly through the settled portions of the district; to continue the trunk road commenced last season between Port Arthur and Loon Lake along the railway and east towards Nipigon ..... 75,000

*Sudbury and Algoma Districts:*

The maintenance of trunk roads in the vicinity of Sudbury and throughout the mining district surrounding Sudbury, including the West Shining Tree Gold District; for the extension of a new road between Capreol Station on the C. N. Railway north of Sudbury to Sellwood Junction on the same railway, for the maintenance of the trunk road between Sudbury and North Bay, to complete the trunk road from Rutter Station on the Toronto Branch of the C. P. Railway east about 20 miles to the village of Noelville and east to Lake Nipissing, which was partly constructed last season. For the gravelling in places of the trunk road constructed in 1919 between Warren Station on the C. P. Railway, south to the Village of St. Charles ..... 80,000

*Nipissing District:*

For the reconstruction and repairing of a new road between Verner on the C. P. Railway, southerly to connect with the trunk road at Noelville; for repairing the road from Sturgeon Falls on C. P. Railway, north to Field; for the completion of a road north of North Bay in the Township of Widdifield; for gravelling in places and maintenance of trunk road between North Bay and Mattawa, also the extension of the trunk road east from Powassan Station on G. T. Railway, through the Township of Chisholm ..... 75,000

*Parry Sound and Muskoka Districts:*

For the completion of the North Bay and Bracebridge trunk road through the Districts of Parry Sound and Muskoka from Novar Station on the G. T. Railway, to a point south of Severn Bridge; to continue the construction of a trunk road commenced last season, running west from

Trout Creek Station on the G. T. Railway through the Village of Com-  
 manda to Loring; to continue the construction of a trunk road from  
 Nipissing village west to Restoule; to reconstruct and gravel, in places,  
 the road between Gordon and Foots Bay on the road from the Village  
 of Parry Sound to Bala; to construct and repair in places the trunk  
 road between Callander and Huntsville ..... 132,000

*County of Renfrew:*

To continue the extension of the Pembroke and Mattawa trunk  
 road from Klock on the C. P. Railway east to near Chalk River ..... 25,000

*Algoma District, Vicinity of Sault Ste. Marie:*

To complete the gap between Algoma Mills and Cutler Station on the  
 C. P. Railway; for maintenance and repairs of trunk road between Sault  
 Ste. Marie and Sudbury; for the maintenance of trunk roads on St.  
 Joseph Island and Campement D'Ours Island; for the completion of  
 Goulais Bay Road and for the construction of two small bridges near  
 Desbarats and Thessalon on the Sault Ste. Marie trunk road ..... 83,000

*Manitoulin Island:*

For the completion of the trunk roads commenced three years ago  
 between Little Current and Gore Bay and between Little Current and  
 Manitowaning; also the extension of the trunk roads south and west of  
 Gore Bay ..... 25,000

*Unforeseen Work:*

The construction of short roads in the new settlement; building  
 and repairing small bridges; the construction of culverts, etc. .... 30,000

Engineering, office expenses, surveys, exploration, machinery and  
 equipment ..... 30,000

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\$700,000

J. F. WHITSON,  
*Commissioner.*

## NEW LISKEARD FARM.

The successful operation of the Farm has been very much hindered on account of lack of farm buildings. It is more imperative that the New Liskeard Demonstration Farm should have suitable buildings and farm stock if it is to fulfill the purpose for which it was established; viz., to demonstrate the most successful lines of farm work in Temiskaming District in particular, and the north country as a whole. To do this, live stock is absolutely essential, particularly in a country primarily adapted to live stock farming. I cannot too strongly recommend that steps be taken at once to prepare for the erection of buildings next summer. Operations should be commenced early in the spring in order that the buildings be ready for the first crop harvested.

One of the most important lines of work carried on during the past season has been in the clearing of additional land. In the early fall of 1918 a contract was let for clearing thirty acres. On account of the wet weather it could not be completed. During the past summer weather conditions were most favourable for land clearing and there were about seventy acres made ready for the plow; sixty on the "West" place and ten on the property in town. This was all fall plowed except ten acres on the "West" property. There are from seventy-five to eighty acres ready for crop next year.

## FIELD CROPS.

On May 31st, eight acres were seeded to O.A.C. No. 72 oats at the rate of three bushels per acre. The field had been in pasture for some years and was spring plowed. At first it was intended that the grain from this field should be used for ensilage. However, as no buildings were erected, it was allowed to ripen and was cut on September 3rd. The quality of grain was very good and the yield sixty bushels per acre. Harvest conditions prevented stacking operations and the grain was quite badly coloured. On the whole, we consider the crop a good average, especially for this year.

On June 5th, seven acres were seeded with O.A.C. No. 3, three bushels per acre. They were cut on the 15th day of August and gave a yield of fifty-five bushels per acre. The quality of these oats is better than that of the No. 72. They were cut two weeks earlier and were put in stack before the wet weather came on. The No. 3 has proven to be a splendid oat for this section.

There was a small field of new land seeded late in June. This grain did not mature and was cut and made into hay.

A small area of potatoes was planted on June 10th. The Irish Cobbler and Green Mountain were the varieties used. Results were fairly satisfactory but hardly up to the standard. The entire crop was shipped to Kapuskasing.

There was also a small acreage of turnips planted. These did much better than was expected owing to the fact that weather conditions after planting were most favourable for roots. After rain came the turnips picked up and developed into one of the best crops on the Farm. They were sold to a farmer for feed on account of lack of storage and also because we had no stock to which to feed them.

The seven acres of No. 3 oats were seeded down to hay and the catch was extra good. The nine acres where the No. 72 were grown were fall plowed for crop next year.



No other kinds of grain were grown for the reason that all hay and grain had to be stacked. Therefore we did not consider it would be good business to try out small areas of wheat, barley and other grains.

The hay crop was a really good average, yielding from one and a half to two tons per acre. It was a first crop and mostly clover.

The second growth or aftermath, was extra heavy. It matured so well that we decided to try an experiment in cutting some of it for seed. Cutting was done on November 15th. Weather conditions were very favourable at that time and we expected to get it all stacked in good shape. However, rain came on the night before we were ready to stack, consequently we had to leave it in coil for weeks before it was threshed. There was quite a percentage of seed frosted but sufficient good seed to pay all expenses in connection with the experiment.

#### SHORT COURSE IN AGRICULTURE AND SEED FAIR.

The Second Annual Short Course and Seed Fair was held for five days, March 10th to 15th.

The instructors were: W. J. Bell, B.S.A., Kemptville; Frank Marcellus, B.S.A., Guelph; F. C. Hart, B.S.A., Markets Branch, Toronto; A. H. McLennan, Vegetable Specialist, Toronto; W. B. Angle, New Liskeard; L. H. Hanlan, J. M. MacIntosh, A. MacLachlan, and the writer, of New Liskeard and Monteith.

The Course was arranged and conducted in a practical manner throughout. The farmers of the district took a very keen interest in the Course, also in the Fair. There was a large attendance at all lectures, especially those held in the afternoon. It seemed to be difficult for the farmers to attend both morning and afternoon lectures.

The entries in the different grain, seed and root classes were not as numerous as in 1918. This is explained by the fact that the harvest season of 1918 was less favourable than that of 1917.

#### ENTRIES.

Oats .....	16
Wheat .....	23
Barley .....	10
Peas .....	12
Grasses .....	4
Flax .....	3
Potatoes .....	14
Total .....	82

#### DONATIONS.

Hogg & Lytle .....	\$25 00
Massey-Harris Co., J. T. Goldthorpe, Agent .....	25 00
International Harvester Co., O'Grady Bros., Agents .....	25 00
W. M. Gray-Sons, Campbell, Ltd., O'Grady Bros., Agents .....	10 00
Canadian Potato Machinery Co., O'Grady Bros., Agents .....	5 00
Chas. A. Julien, O'Grady Bros., Agents .....	15 00
Imperial Bank, silver cup.	
Union Bank, silver cup.	
J. Fleury & Sons, O'Grady Bros., Agents .....	17 00
Cockshutt Plow Co., Edwards Agency .....	15 00
Agricultural Society, New Liskeard .....	50 00

## PRIZE WINNERS.

*Class 1, O.A.C. No. 3 Oats—*

- 1st. Chas. Thomas, Uno Park, Ont.
- 2nd. Jno. Molitor, Earlington, Ont.
- 3rd. G. J. Bray, R. R. No. 1, New Liskeard, Ont.

*Section 2, O.A.C. No. 72 Oats—*

- 1st. D. D. Taylor, Hanbury, Ont.
- 2nd. Bruce Kerr, New Liskeard, Ont.

*Section 3, Abundance—*

- 1st. W. R. Peters, Uno Park, Ont.
- 2nd. G. L. Broughton, Uno Park, Ont.

*Section 4, Any Variety (White)—*

- 1st. Geo. Stephenson, Box 412, Englehart, Ont.
- 2nd. A. A. Wilson, New Liskeard, Ont.
- 3rd. Mr. Mall, New Liskeard, Ont.

*Class 2, Wheat, Marquis Spring—*

- 1st. Geo. C. Foster, Uno Park, Ont.
- 2nd. Cyril Beatty, Earlington, Ont.
- 3rd. Mr. Mall, New Liskeard, Ont.
- 4th. Jno. Sharp, R. R. No. 2, New Liskeard, Ont.
- 5th. J. M. Gray, New Liskeard, Ont.

*Section 2, Fall Wheat—*

- 1st. A. Doupe, Hanbury, Ont.

*Class 3, Barley (Any Six-rowed Variety)—*

- 1st. Geo. C. Foster, Uno Park, Ont.
- 2nd. Mr. Foley, R. R. No. 1, New Liskeard, Ont.
- 3rd. G. Stein, New Liskeard, Ont.

*Class 4, Peas, Large Field Pea—*

- 1st. W. R. Peters, Uno Park, Ont.
- 2nd. P. Gouvremont, New Liskeard, Ont.
- 3rd. A. Lusk, New Liskeard, Ont.

*Section 2, Small Field Pea—*

- 1st. A. Doupe, Hanbury, Ont.
- 2nd. G. Stein, New Liskeard, Ont.
- 3rd. Allen Merchant, Uno Park, Ont.

*Class 5, Grasses, Red Clover Seed—**Section 2, Alsike Seed—*

- 1st. B. Keetch, New Liskeard, Ont.

*Section 3, Timothy Seed—*

- 1st. A. Doupe, Hanbury, Ont.
- 2nd. T. H. Nickle, Hanbury, Ont.
- 3rd. W. R. Peters, Uno Park, Ont.

*Class 6, Flax—*

- 1st. Geo. C. Foster, Uno Park, Ont.
- 2nd. A. Doupe, Hanbury, Ont.
- 3rd. J. M. Gray, New Liskeard, Ont.

*Class 7, Potatoes, Irish Cobbler—*

- 1st. W. R. Peters, Uno Park, Ont.
- 2nd. G. J. Bray, R. R. No. 1, New Liskeard, Ont.
- 3rd. Chas. Thomas, Uno Park, Ont.
- 4th. E. David, New Liskeard, Ont.
- 5th. G. A. Bassett, New Liskeard, Ont.

*Section 2, Green Mountain—*

- 1st. Geo. Stephenson, Box 412, Englehart, Ont.
- 2nd. J. M. Gray, New Liskeard, Ont.
- 3rd. E. Healey, Hanbury, Ont.

*Sweepstakes—*

Oats—Banner, Geo. Stephenson, Box 412, Englehart, Ont.

Wheat—Marquis, G. C. Foster, Uno Park, Ont.

Peas—Small Field Pea, A. Doupe, Hanbury, Ont.

Grasses—Timothy, A. Doupe, Hanbury, Ont.

Potatoes—Irish Cobbler, W. R. Peters, Uno Park, Ont.

The Seed Fair was carried on under the same arrangement and organization as the previous year. We are planning to hold our Third Annual Fair next year and hope for more entries than we had this year.

In conclusion, I beg to state that practically all work in connection with the Farm was done under the supervision of Mr. J. M. MacIntosh, now Agricultural Representative at Sault Ste. Marie. I succeeded Mr. MacIntosh here on September 1st, this year.

There is no doubt in my mind that a properly conducted Farm in this locality (New Liskeard) can be made to fill an important place in the Agricultural Development of Temiskaming District.

All of which is respectfully submitted.

(Sgd.) W. G. NIXON,

*Superintendent.*

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### MATHESON FARM.

There are one hundred and sixty acres in the Farm and approximately sixty cleared. The balance has been burned over and is covered with logs and stumps that can be very easily cleared.

Thus far, the Farm has been used in growing hay, grain and potatoes. The grain has been sold to settlers at moderate prices for seed purposes, when it was suitable for that.

This year a small post barn was erected in which to store hay and grain and where threshing and pressing can be done. The barn offers a very good demonstration to settlers, in that it is cheap and yet efficient. There is very little framing to it so that any handy man can build one like it. The frame is all made up of posts, braced with post girts and plank braces. It is sheeted with rough lumber and has a galvanized iron roof.

This year the Farm was cropped as follows:

*Fall Wheat—*

Dawson's Golden Chaff ..... 5 acres.

*Spring Wheat—*

Marquis Variety ..... 1 acre.

*Oats—*

O.A.C. No. 72 ..... 2 bushels.

O.A.C. No. 3 ..... Balance of farm.

The main crop (as stated) consisted of No. 3 oats. They were seeded on May 16th and harvested on August 11th, eighty-seven days from date of seeding.

The O.A.C. No. 72 oats were seeded on May 29th and harvested one hundred and two days later, on September 8th.

The fall and spring wheat did not give very good results. Twenty bushels of spring wheat were threshed from one acre. While this may be considered a

fair yield it is hardly up to the standard. On account of severe winter killing the fall wheat did not give a very heavy yield twenty-five bags were threshed from five acres.

The No. 3 oats are of very good quality, there are 1,098 bushels as they came from the mill.

(Sgd.) W. G. NIXON,

*Farm Director.*



## STATEMENT OF EXPENDITURE UNDER NORTHERN AND NORTH-WESTERN ONTARIO DEVELOPMENT ACTS, 1912, 1915, AND AMENDMENTS.

(For the Year Ended 31st October, 1919.)

District.	Expenditure.
1. District of Nipissing, Parry Sound and Muskoka. North Bay to Callander; Callander to Washago on G. T. Ry.; Mattawa to Pembroke; Mattawa to Markstay on Canadian Pacific Railway .....	\$199,824 47
2. District of Temiskaming. Haileybury to Cochrane; Cochrane to Kapuskasing; Porcupine and Elk Lake .....	507,260 56
3. District of Sudbury. Vicinity of the town of Sudbury and Mining District surrounding, including the West Shining Tree District; Sudbury-North Bay Trunk Road; and portion of Sault Ste. Marie-Sudbury Trunk Road .....	191,499 24
4. District of Algoma (North), Vicinity of Hearst, along Transcontinental and Algoma Central Railways .....	20,089 29
5. District of Algoma (South). On Sudbury and Sault Ste. Marie Trunk Road; Sault Ste. Marie to Algoma Mills, and Goulais Bay Road ..	134,705 33
6. District of Thunder Bay. Tributary to Port Arthur and Fort William	107,877 55
7. District of Kenora. Vicinity of Kenora and Keewatin and between Wabigoon and Dryden and Oxdrift on Canadian Pacific Railway..	52,092 48
8. District of Rainy River. In Rainy River Valley .....	137,102 26
9. Algonquin Provincial Park .....	102 38
10. St. Joseph Island .....	22,248 67
11. General Administration Expenses .....	18,457 81
12. Experimental Farms .....	12,992 49
13. Creamery, New Liskeard .....	7,733 07
14. Grain Elevators .....	182 25
15. Seed Grain .....	7,322 04
16. Cattle Purchase Account .....	18,720 61
17. Soldiers' Settlement Account .....	366,085 13
18. Settlers' Loan Account .....	44,456 01
	<hr/>
	\$1,848,751 64

## STATEMENT OF EXPENDITURE, YEAR ENDING 31ST OCTOBER, 1919.

*Making of Roads:*

Grigg, A., Deputy Minister, salary .....	\$400 00	
Whitson, J. F., Commissioner, salary .....	4,500 00	
Bruce, A. E. D., Secretary and Accountant, salary .....	3,073 25	
Beardall, F. G., Clerk, salary .....	1,625 06	
Lawer, W. L., Bookkeeper, salary .....	1,536 62	
Dower, A. R., Clerk, salary .....	1,164 20	
Reid, A., Draughtsman, salary .....	842 54	
Laidlaw, Miss B., Stenographer, salary (3 months) .....	291 82	
	<hr/>	\$13,433 49
Wages .....	\$797,674 86	
Contracts .....	125,214 87	
Supplies and equipment .....	454,936 82	
	<hr/>	1,377,826 55
		<hr/>
		\$1,391,260 04

*Advancement of Settlement and Colonization:*

Wages .....	8,042 26	
Contracts .....	913 75	
Supplies, stock and equipment .....	4,036 48	
	<hr/>	12,992 49

*Creamery, New Liskeard:*

Wages .....	\$3,223 14	
Supplies, equipment, freight and expenses ....	4,509 93	
	<hr/>	7,733 07

*Grain Elevators, New Liskeard District:*

Preparing statistics and disbursements .....	\$182 25
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*Seed Grain:*

Wages .....	\$93 45	
Seed, freight and expenses .....	7,228 59	
		7,322 04

*Cattle Purchase Account:*

Cost of cattle, feed, freight and expenses .....	18,720 61
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*Returned Soldiers' and Sailors' Land Settlement Act:*

Wages .....	\$155,413 91	
Contracts .....	26,608 03	
Material, equipment, supplies, stock, railway siding and expenses .....	184,063 19	
		366,085 13
		\$1,804,295 63

*Settlers' Loan Department:*

Dane, F., Commissioner, salary .....	\$5,000 00	
Kennedy, W. K. P., Accountant, salary .....	2,500 00	
Crawford, G., Stenographer, salary .....	777 50	
		8,277 50
Net amount of loans issued .....	\$35,470 00	
Expenses .....	708 51	
		36,178 51
		44,456 01
		\$1,848,751 64

ARTHUR E. D. BRUCE,  
Secretary and Accountant.

## SPECIAL WARRANT ACCOUNTS.

ADMINISTERED BY THE NORTHERN DEVELOPMENT BRANCH.

EXPENDITURE TO 31ST OCTOBER, 1919.

Order-in-Council dated 30th September, 1916—	
Expenses Log Houses at Toronto and Ottawa Exhibitions and at Stock Judging Pavilion, New Liskeard .....	\$1,591 27
Order-in-Council dated 20th February, 1917—	
Expenditure .....	17 15
Order-in-Council dated 18th May, 1917—	
Freight .....	3 04
Order-in-Council dated 18th May, 1917—	
Returned Soldiers' Recreation Account—Expenditure, 1919 .....	224 29
	\$1,835 75

ARTHUR E. D. BRUCE,  
Secretary and Accountant.

## REVENUE ACCOUNT, 1919.

<i>The Making of Roads:</i>	
Refunds on the sale of supplies, etc. ....	\$553 65
<i>Advancement of Settlement and Colonization:</i>	
Sale of hay, produce, equipment, etc., and rent.....	395 50
<i>Creamery at New Liskeard:</i>	
Butter revenue, sale of buttermilk, cans, etc. ....	6,922 41
<i>Seed Grain:</i>	
Notes retired .....	13,107 78
<i>Purchase of Cattle Account:</i>	
Proceeds of cattle sold .....	2,880 00
<i>Returned Soldiers' and Sailors' Land Settlement Act:</i>	
Sale of provisions, etc. ....	78,668 26
<i>Special Warrant Accounts:</i>	
Sales and refunds .....	719 95
	<hr/>
	\$103,247 55
<i>Settlers' Loan Account:</i>	
Payments on principal, interest and refunds .....	61,772 82
	<hr/>
Total revenue under all heads, 1919 account .....	\$165,020 37

## RECORD OF CORRESPONDENCE.

*For year ended 31st October, 1919.*

Letters received .....	8,367
Letters mailed .....	6,715
Circulars mailed .....	1,509
	<hr/>
	8,224

ARTHUR E. D. BRUCE,  
Secretary and Accountant.

# REPORT

OF THE

# Minister of Lands and Forests

OF THE

## PROVINCE OF ONTARIO

For the Year Ending 31st October

# 1920

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PRINTED BY ORDER OF  
THE LEGISLATIVE ASSEMBLY OF ONTARIO

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TORONTO:

Printed and Published by CLARKSON W. JAMES, Printer to the King's Most Excellent Majesty

1921





Minister of Lands and Forests and his farm, Manitoulin Island.

# CONTENTS

	PAGE
Minister's Preface .....	5
APPENDICES:	
No. 1. Department Inside Officers and Clerks .....	18
2. " Outside Agents and Inspectors .....	21
3. Statement of Lands Sold and Leased with Collections .....	23
4. " Gross Revenue .....	24
5. " Receipts (Special Funds) .....	25
6. " Gross Disbursements .....	26
7. " Timber Cut and Amounts Accruing <i>re</i> Dues, etc. ....	32
8. " Patents, etc., Issued .....	34
9. " Revenue from Woods and Forests .....	35
10. Successful Candidates at Cullers' Examination .....	36
11. Statement of Work in Military Office (Lands Branch) .....	36
12. " Letters, Reports, Documents Received and Dispatched ..	37
13. " Locations, etc., under Free Grants Sec. P. L. Act .....	38
14. " Lands Sold .....	45
15. Report of Director of Surveys on Crown Surveys .....	51
15a. Statement of Municipal Surveys Confirmed .....	54
16. " Municipal Surveys Ordered .....	55
17. " Crown Surveys in Progress .....	56
18. " Crown Surveys Completed .....	58
19. Surveyor's Report, Parts of Townships Devon and Hartington, District of Thunder Bay .....	60
20. " Base and Meridian Lines, District of Thunder Bay ..	62
21. " Township Outlines, District of Algoma .....	65
22. " Meridian and Base Line, District of Kenora, Thunder Bay and Patricia .....	68
23. " Meridian Line in the Vicinity of Ground Hog River, Districts of Sudbury and Timiskaming .....	74
24. " Part of Township of Nansen, District of Timiskaming	75
25. " Part of Boundary Line Between the Districts of Rainy River and Kenora .....	77
26. " Traverse of Missinaibi Lake and River and Tributary Waters, Districts of Algoma and Sudbury .....	80
27. " Township Outlines, District of Algoma .....	82
28. " Re-establishing Part of Boundary of Algonquin Park	85
29. " Certain Township Outlines on the Kapuskasing River, District of Algoma .....	85
30. " Sub-division, Township of Fowler, District of Thunder Bay .....	88
31. " Meridian Line and Traverse of Part of Dog Lake, North of Fowler Township, District of Thunder Bay .....	93
32. " Traverse of Long Lake, District of Thunder Bay ....	94
33. " Sub-division, Residue Hanlan Township, District of Algoma .....	96
34. " Sub-division, Residue Casgrain Township, District of Algoma .....	98

	PAGE
35. Surveyor's Report, Outlines of Townships, MacVicar, Carmichael, Stringer, Ford, Hicks, Oke, Poulett and Aitken, District of Timiskaming .....	99
36. " Certain Township Outlines, District of Thunder Bay..	102
37. " Kashaweogama and Island Lakes, Districts of Thunder Bay and Kenora .....	104
38. " Certain Township Outlines North of C.P.R., District of Sudbury .....	107
39. " North Seventy-eight Miles of West Boundary, Nipigon Forest Reserve and Production Northward .....	108
40. " Aerial Survey, James Bay Vicinity .....	110
41. Quetico Provincial Park, Superintendent's Report .....	115
42. Algonquin Provincial Park, Superintendent's Report .....	116
43. Colonization Roads, Superintendent's Report .....	120
44. Highways and Bridges under Northern Development Branch .....	144
45. Northern Development Branch—Statement .....	175
46. Report of Kapuskasing Board of Adjustment .....	182
47. Settlers' Loans, Commissioner's Report .....	204
48. Forestry Branch Report .....	207
49. Rondeau Provincial Park, Superintendent's Report .....	236

# Report of the Minister of Lands and Forests of the Province of Ontario

For the Year Ending 31st October, 1920

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*To His Honour the Lieutenant-Governor of the Province of Ontario.*

MAY IT PLEASE YOUR HONOUR:

For the information of Your Honour and the Legislative Assembly, I have the honour to submit a report for the fiscal year ending the 31st of October, 1920, covering the Department of Lands and Forests.

Prior to the year 1906 the management and control of the natural resources of the Province as applicable to Lands, Forests and Mines, rested in the "Department of Crown Lands" but in that year by Legislative Amendment the "Department of Lands, Forests and Mines" was substituted therefor. This designation obtained up to the 1920 Session of the Legislative Assembly, when under an Act, known as "The Department of Mines Act," assented to June 4th, 1920, a separate Department of Mines was established, the hitherto parent Department thus becoming "The Department of Lands and Forests." Consequently, the data furnished herein is excluded to the Lands and Forests, while that bearing on the Mining Industry may be found in the Report of the Department of Mines.

## COLONIZATION AND IMMIGRATION.

The Colonization and Immigration Branch of the Province, which had been under the jurisdiction of the Department of Lands, Forests and Mines since the 6th of January, 1916, was by Order-in-Council dated the 12th March, 1920, transferred to the Department of Agriculture, to which it had formerly been attached so that statistics bearing upon this service may be obtained from the reports of the Minister of Agriculture.

## CLERGY LANDS.

Clergy Lands to the extent of 82 acres were sold for \$57.40 and the collection on account of same and former sales of such lands was \$862.21. (See Appendix No. 3, page 23.)

## COMMON SCHOOL LANDS.

The area of these lands sold during the year was 146.25 acres for \$200.77, while the collection on account of these and former sales was \$5,527.74. (See Appendix No. 3, page 23.)

## GRAMMAR SCHOOL LANDS.

An area of 151 acres was sold for \$231.00. The collection on account of former sales was \$756.16. (See Appendix No. 3, page 23.)



## UNIVERSITY LANDS.

The area of these lands sold during the year was 720.87 acres for \$360.44. The amount collected on account of these and former sales was \$1,806.18. (See Appendix No. 3, page 23.)

## CROWN LANDS.

There was sold during the year for agricultural and town site purposes 72,591.08 acres for \$69,956.87. The collection on account of these and former sales was \$81,480.12.

Crown Lands to the extent of 10,688.81 acres were leased for \$2,155.06. Collections on these and former leases amounted to \$59,583.18.

The total area of Crown Lands disposed of by sale and lease throughout the year was 84,379.81 acres for the sum of \$72,961.54. The total collections on account of sales, leases, etc., were \$150,015.59. (See Appendix No. 3, page 23.)



Bush lot in 1917, 120 acres cleared in 1920. Farm of R. R. Long and Son, in Bowman Township.

## SETTLERS IN SALE TOWNSHIPS.

The tendency towards purchasing lands in Northern Ontario for pioneer settlement slightly improved over the previous year. Temiskaming District with its agencies at New Liskeard, Englehart, Matheson, and Cochrane, all falling within the great clay belt, is more largely in the eye of prospective land settlers than any other particular section, presumably because it offers, by means of the Provincial Government Railway and the Transcontinental Line, a ready means of acquiring the best of clay loam soil and a reasonable supply of pulpwood. There a settler is able to secure regular employment in the bush or lumber camps during the winter months to earn sufficient means to assist him in clearing and improving his homestead and, with the advantages accruing from his rights under a fairly generous land regulation whereby, subject to certain conditions, he may cut and sell his pulpwood, the settler, if possessed of ambition and energy, should make good.

Numerous inquiries are received from time to time relative to the securing of land in all parts of the Province and with a view to facilitating the granting

of applications inspections are made of sold lots to check up the improvements of holders of unpatented claims. When delinquents are found cancellation is effected and though over 400 individuals acquired by purchase farm lots in surveyed areas the Crown cancelled 208 sales for failure of the purchasers to meet the prescribed conditions of settlement.

Permission was granted to 375 settlers to assign their interests for divers reasons, the assignee in each case being required to pay the purchase price in full, rather than by instalments.

Settlers to the number of 425 satisfied the requirements and obtained their patents in sale townships.

Special provision is made in the case of soldiers who held unpatented land and served in the Canadian Expeditionary Forces overseas; whereby arrears of payments due the Crown are remitted and patents issued on completion of settlement duties. A free grant of 160 acres may be made to a returned soldier conditional that he perform the homestead duties. A considerable number have availed themselves of these privileges.

Several of the isolated remaining Clergy, Grammar and Common School Land Sales were paid in full and the rightful claimants secured patents. (For tabulated statement see Appendix No. 8, page 34.)

#### FREE GRANTS.

Since the Great War there has been a gradual growth of actual settlers taking free homesteads and the number has again increased over last year, there being 654 during the year. The price of farm products has been fairly steady and the crops quite bountiful and these factors while tending towards settlement in the older portions of the Province apparently influence those land seekers who are desirous of obtaining free farms for homesteading. The average individual farm location increased from 125 acres of a year ago to 166 acres this year when the total area thus located comprised 88,813 acres. Patents for Free Grant lands issued to 458 persons covering an area of 53,295 acres, while over 7,500 acres were purchased in small parcels within Free Grant territory for fuel, pasture, pleasure and summer resort purposes.

A number of settlers have come from Michigan and Minnesota States and some are returning to Rainy River and Thunder Bay Districts from the dry belts of Saskatchewan and Alberta, and in addition to the new locations, where after inspection by a Crown official it is found the locatee is not making good, is a speculator or a spurious holder, his location is cancelled and the land resumed. In this way over 70,000 acres reverted to the Crown during the past year.

The Free Grant areas of the province are widely scattered, both Old and New Ontario having their respective territories. Certain sections south of the French River and Georgian Bay, opened many years ago, have been very largely alienated in respect of the choice arable land as it goes in the rocky formations. Isolated lots arise regularly where at least fifty per cent. of the land is fit for farming, the minimum percentage presented by the regulations, but in most instances these are sections comprised in timber berths, and frequently serious objections are registered by the timber licensees against disposing of the land. Where, however, the Crown is convinced that the applicant has bona-fide intentions of becoming a farmer in the general acceptance of the term every reasonable opportunity is afforded him, irrespective of the timber licensees' protestations, which nevertheless

are always investigated. Retardation of real settlement is not encouraged by sustaining every objection of timber dealers. Neither is the holding of land ostensibly for settlement though in reality for timber manipulation, condoned.

#### MILITARY GRANTS.

The Act 1, Edward VII, Cap. 6, which governs these grants, came into force on the 15th of April, 1901.

This Act is applicable to all persons who had served in the Canadian Militia and were called out for active service in the Province of Ontario and to persons



River scene, Northern Ontario.

who enlisted in Ontario for service and went to South Africa during the "Boer War" with the regular military forces of this Province.

A person claiming land under this Act was required to furnish evidence satisfactory to the Minister of Lands that he was a member of one of these classes, and all claims were required to be filed with the Minister of Lands before the 30th day of September, A.D., 1908.

On receipt of this evidence a certificate was issued to the veteran, giving him authority to select 160 acres of land in certain townships, designated for this purpose by Order-in-Council.

This certificate was also accepted by the Department of Lands for the sum of \$80 in payment for lands purchased from the said Department, or could be surrendered to the Government and an allowance of \$50 in cash given therefor.



An amendment to the Veterans' Land Grant Act was passed by the Legislature of the Province of Ontario in the Session of 1920, to come into force and take effect on the 1st of June, 1920, providing "That lands located and granted under this Act, have passed out of the ownership of such persons and are being held out of production, and an inspection of these lands shows that the owner lives outside of the District in which the lands are situate, notice may be sent to the owner that such owner must within one year from the date of notice become a bona-fide user or occupant of said lands and comply with the regulations made under this Act and that in default of his so doing all his right, title and interest in the said lands shall revert to the Crown, but the owner of such lands shall be entitled to be paid by the Treasurer of Ontario an amount equal to the purchase money received by the Province on the sale of the lands under this Act." But few applications and inquiries in pursuance of this amendment were filed during the past year.

Under the Act 1, Edward VII, Cap. 6, and amendments thereto, there have been issued 13,998 certificates and although the time for receiving applications for these grants expired on the 30th of September, 1908, there are still letters being received from men or their next of kin, who were entitled to this grant, who claim that they have only now become aware of the fact. These applications, therefore, could not now be accepted and no forms of applications have been sent out.

During the past year there have been located 35 of these certificates covering 5,640 acres in the townships open for veterans, making in all a total of 8,364 certificates thus located.

In seven cases the certificates have been surrendered and applied in payment of lands purchased from the Crown, covering in all 703 acres, making a total of 798 that have thus been applied.

There was one certificate surrendered to the Crown for the \$50 commutation money, making a total of 3,264 certificates surrendered in this manner.

During the year there have been issued 69 patents for lands located by veterans, and in all 7,440 have thus been disposed of.

The total number of certificates that have, therefore, been disposed of is 12,426, leaving 1,572 that are still outstanding.

During the year 13 veteran locations, covering 2,118 acres, were cancelled for the non-performance of the settlement duties to which they became subject on account of being assigned before patent was issued.

Under the Act 1, Edward VII, Cap. 6, and amendments thereto covering these grants it is necessary for all locatees of the lands located to apply for their patents before ten years have expired from the date of location. If this application for patent is not made within ten years, then the land comes under the settlement regulations, and unless the settlement duties are proceeded with the locations are liable to cancellation. Previous to the expiration of the ten years after location, the Department sends a notice to each veteran directing him to the provision respecting patent and in this manner has saved many of the locatees from losing their lands by forfeiture. (See Appendix No. 11.)

#### COLLECTIONS.

The total revenue of the Department from all sources was \$2,911,047.13. Of this, \$81,480.12 came from Agricultural Lands and Townsites: \$59,583.18 Crown Leases. From Woods and Forests the revenue was \$2,656,630.51 made up of the



following items, Bonus, \$1,143,725.18; Timber Dues, \$1,171,692.14; Ground Rent, \$105,398.88; Transfer Fees, \$7,640.00; Fire Protection Charge, \$228,174.31. From Provincial Parks, \$70,900.84. (See Appendix No. 4, page 24.

#### DISBURSEMENTS.

The total expenditure of the Department for ordinary service was \$1,624,805.51. Some of the principal items were: Crown Land Agents' Salaries and Disbursements, \$20,120.72; Homestead Inspectors, \$21,725.39; Crown Timber Agents, \$33,709.64; Ottawa Agency, \$3,466.03; Fire Ranging, \$504,518.42; Forest Ranging and Measurement of Timber, \$207,675.13; Forest Reserves, \$4,456.36; Reforestation, \$47,454.72; Algonquin Provincial Park, \$34,739.55; Quetico Provincial Park, \$10,260.90; Rondeau Provincial Park, \$9,736.57; Purchase and Maintenance of Automobiles, \$2,084.49; Surveys, \$150,700.97; Colonization Roads, \$451,808.59; Grant, Canadian Forestry Association, \$1,000.00; Commissions *re* Sundry Investigations, \$50,000.00; Contingencies, Lands and Forests, \$36,667.32; Travelling Expenses, Lands and Forests, \$2,721.42; Contingencies, Forestry Branch, \$2,093.49; Contingencies, Colonization Roads Branch, \$3,223.02; Travelling Expenses, Colonization Roads, \$936.56.

#### WOODS AND FORESTS.

The accrued revenue from Woods and Forests for the year ending October 31st, 1920, amounted to \$3,120,808.41, an increase of \$842,249.75 over the preceding year.

The revenue collected also shows a substantial increase over previous year's collections, being \$2,656,630.51 as against \$1,805,081.36, an increase of \$853,549.15.

In season 1919-20 the returns show a slight falling off in quantity of pulpwood and cordwood taken out. In all other classes of timber the production shows a gratifying increase.

The quantity of sawlog, boom and square pine timber cut during past season totalled 312,924,391 feet B.M., an increase of 121,000,000 feet B.M. The production of other timber amounted to 52,729,965 feet B.M., or over 15,000,000 more than that for the previous season.

The quantity of pulpwood taken off Crown Lands last season was 306,696 cords or 13,499 cords less than in 1918-19.

For several years previous to 1918-19 little railway construction was attempted but in that season the demand for ties increased the production from 2,094,099 taken out in 1917-18 to over 5,000,000 for season 1918-19. The number of ties taken out during the season of 1919-20 was 6,102,287 or 961,633 greater than in 1918-19.

#### LANDS UNDER LICENSE.

The area under license at the close of the fiscal year was 14,895 $\frac{1}{4}$  square miles, a reduction of 1,335 $\frac{3}{4}$  square miles from the previous year.

#### SUMMARY OF REVENUE FROM WOODS AND FORESTS.

Bonus . . . . .	\$1,143,725 18
Timber Dues . . . . .	1,171,692 14
Ground Rent . . . . .	105,398 88
Transfer Fees . . . . .	7,640 00
Fire Protection . . . . .	228,174 31

\$2,656,630 51

A list of the timber berths sold during the year with the names of the successful purchasers and the prices paid is being prepared for the next year's report.

The Kapuskasing Pulp Limit on the Kapuskasing River, in the Districts of Timiskaming and Algoma, comprising 1,740 square miles, was offered for sale in September, 1917, and was purchased by Messrs. S. A. Mundy and E. Stewart. The price or flat rate to be paid was 75c. per cord for all classes of pulpwood, and \$15.00 per thousand feet board measure for red and white pine. In pursuance of the sale an agreement was entered into between the Crown and the purchasers under date of 9th of February, 1918, for the effectual carrying out of the conditions of sale. The purchasers, on the 2nd of March, 1918, transferred their interests to Spruce Falls Pulp and Paper, Limited, who for divers reasons were granted extensions of time during 1919, in respect of their obligations as to the erection of pulp mill, etc. Operations not having been proceeded with, negotiations in 1920 resulted in an extending agreement dated April 23rd, 1920, followed by a substitutional agreement of the 11th of June, 1920, and by an Order-in-Council of the 15th of June, 1920, which increased the dues payable from 75c. per cord to \$1.15 per cord upon spruce pulpwood and to 95c. per cord upon balsam and other classes of pulpwood.

On the 6th of July, 1920, Spruce Falls Pulp and Paper Company assigned their rights to Spruce Falls Company, Limited. Then by agreement, dated the 4th of August, 1920, the Crown conveyed 446 acres, including the hitherto Kapuskasing Colony farm, to the Company at a price of \$100.00 an acre for the cleared land and \$2.00 an acre for the unstumped portion, while a portion of O'Brien Township, approximating forty square miles, was added to the pulp limit, but the rate for the spruce pulpwood on the additional area was fixed at \$1.60 per cord and on the other classes of pulpwood at \$1.30 per cord, the Crown having the right nevertheless over the whole limit to increase the rates in proportion to any general increase in the rates of dues payable throughout the Province, which may hereafter be made by amendment to the Crown Timber Regulations.

The Spruce Falls Company have, in accordance with the agreement, undertaken operations on a large scale and construction is in full swing. By the 1st of July, 1922, a sawmill of a minimum capacity of 70,000 feet daily, in two shifts, is to be in operation and by the 1st of January, 1922, a pulp mill with a daily output of not less than 100 tons of pulp.

From the progress made at the writing of this report it is fully expected that these mills shall be completed and in running operation by the middle of next summer.

The Company are required to erect a paper mill on or before the 1st of January, 1928, with a minimum capacity of fifty tons of paper per day.

The chain of agreements with the necessary Orders-in-Council and other data shall be printed in pamphlet form under another cover.

#### CULLERS' EXAMINATION.

Two examinations were held during the year, one at Callander and one at Kenora. Twelve candidates succeeded in passing the examination and were duly granted certificates authorizing them to act as Cullers. For names of Cullers who passed at these examinations see page 36, Appendix 10. For complete list of Cullers see Minister's Report for 1917, 1918 and 1919.

## CROWN SURVEYS.

Instructions were issued to twenty Land Surveyors during the year to perform surveys on Crown lands in different parts of Northern Ontario.

The work consisted of surveying base and meridian lines, outlining six and nine mile townships, traversing larger lakes, rivers and islands, principally on the head waters of the rivers flowing to James Bay, the running of timber berth lines and the laying out of town sites.

No instructions were given for the subdivision of townships into farm lots, the area already subdivided being considerably in advance of settlement.



Minesing Road, Algonquin Park.

## MUNICIPAL SURVEYS.

Petitions for the resurvey and establishing of original road allowances were received from the Corporations of the Municipalities of the Township of Beverly, Township of Gloucester, Township of North Easthope.

Upon the necessary Orders-in-Council being passed instructions were issued accordingly for such surveys and the same, when completed, were duly confirmed or amended as provided for under the Survey Act. The Municipal Surveys, which were being performed under instructions prior to the present year and which were



confirmed, are as follows, petitions of the Municipalities of: County of Bruce, Township of Cartwright, Township of Wainfleet.

Detailed summary and description of the several surveys aforesaid will be found in Appendices 15 to 40 inclusive.

#### PARKS.

Prior to the establishment of the Department of Mines, the provincial parks were under the supervision of the Deputy Minister of Mines, but these were retained by the Department of Lands and Forests and are subject to its jurisdiction.

Rondeau Provincial Park, which had been subject to the direction of the Department of Public Works and Highways was transferred to the Department of Lands and Forests by Order-in-Council, May 4th, 1920, so that the three outstanding parks, namely, Quetico, Algonquin and Rondeau, are now under the direction of the Minister of Lands and Forests. (For the reports on these parks by the Superintendents, see Appendices 41, 42 and 49.)

#### COLONIZATION ROADS.

At the last Session of the Legislative Assembly an Act was passed confirming the transfer of this Branch from the Department of Public Works, which took place on March 1st, 1919. Power was also given under this Act to make grants to municipalities in the Colonization Roads area towards the purchase of road-making machinery and materials and towards the salaries of township foremen on road construction.

An Annual Report as to the work of the Colonization Roads Branch will be found in Appendix No. 43, page 120.

#### NORTHERN DEVELOPMENT BRANCH.

The regrettable death on June 12th, last, of Mr. J. F. Whitson, Commissioner of the Branch since its inception, was one of the outstanding incidents of the year. At his death the office of Commissioner was abolished and the operations of the Branch placed in charge of Mr. C. H. Fullerton, Superintendent of the Colonization Roads Branch.

The main feature of the season was the opening for traffic of the road from North Bay to Sault Ste. Marie, a gap of seventeen miles between Cutler and Algoma Mills, having hitherto existed.

The report of the Northern Development Branch is found in Appendix No. 44, page 144.

...

#### KAPUSKASING COLONY.

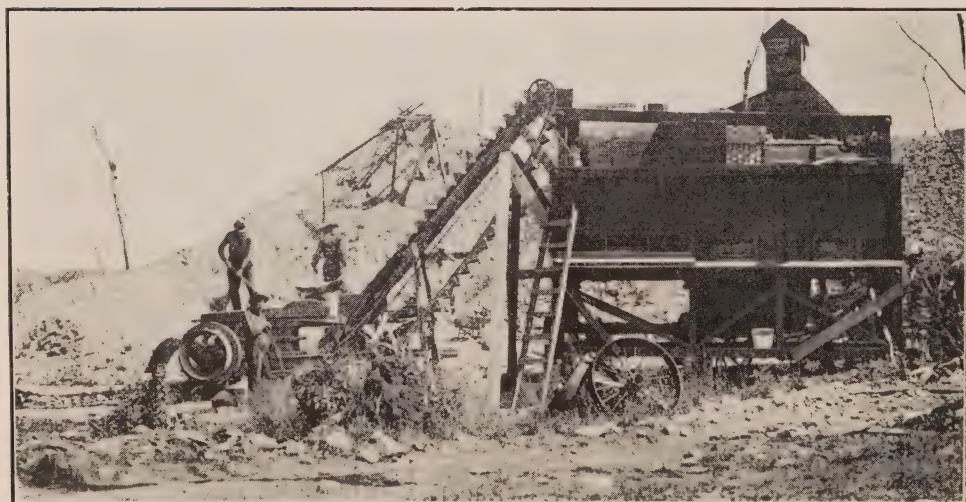
Under date the 21st of February, 1920, a Commission of Enquiry by Order-in-Council was appointed to enquire into and report upon the administration, management, conduct, discipline, etc., of this colony, and any other matters or questions bearing on same, to take evidence and collect information and to make such report or recommendations as deemed advisable.

The Commission consisted of Messrs. W. F. Nickle, chairman; John I. McLaren and John Sharp and the report dated the 16th of March, 1920, was printed in pamphlet form by order of Legislative Assembly of Ontario. This report may be secured from the King's Printer.





Stumping with gasoline power. Bruce Peninsula—Colonization Roads.



Crushing rock for roads.

To give effect to the recommendations contained in the report of the Commission of Enquiry, a Board of Adjustment was appointed by Orders-in-Council dated the 17th and 27th of April, 1920, consisting of General John Gunn, Alexander Stewart Morgan and Archibald Leitch, to which Board Dr. A. H. Abbott was later named as secretary. By an Act passed on the 21st of April, 1920, which was an amendment to the Returned Soldiers' and Sailors' Land Settlement Act, provisions were made for the hearing and determining of complaints, etc., and for the adjustment of other grievances and the awarding of grants in settlement thereof.

The full report of the Board of Adjustment is contained in Appendix No. 46.

The Provincial Colony Farm was sold to the Spruce Falls Company, Limited, under agreement of the 4th of August, 1920, and their pulp and other mills are being erected upon this land. The price paid was \$100.00 an acre for the cleared and \$2.00 an acre for the unstumped land.

The Government proposes to establish by special legislation at the next session a municipality to be known as Kapuskasing, the intention being to develop an ideal northern town.

#### SETTLERS' LOAN.

To the end of the 31st of October, 1920, 2,227 applications for loans, representing \$8,747.60 or an average of \$384.61 per application were received, but only such applications were entertained where it was clearly shown that the money could be used to good advantage for the improvement of the settlement duties. Altogether 1,558 loans, which included one of \$12,000.00 to the Sudbury Co-operative Creamery Company, Limited, and one of \$8,000.00 to the Dairy Co-operative Association, have been made to settlers, these loans amounting to \$490,836.00.

It is gratifying to observe that over 90 per cent. of the interest payments are up to date and payments of principal of over 97 per cent. of the amount due. Appreciation has been expressed by those receiving loans of the advantages that have accrued to them in the work of carrying on land clearances, etc.

For a detailed statement by the Loan Commissioner, see Appendix No. 47.

#### FORESTRY BRANCH.

##### FIRE PROTECTION.

The forest fire protection work was continued this season under the jurisdiction of the Forestry Branch. The season opened with a very dry period and we were without rain for about two months. Practically 60 per cent. of the season's fires were recorded during this early period.

The origin of fires as shown in the report of the Forestry Branch has considerable interest. We find that during this last season 23.9 per cent. of the total fires were of railway origin. From the report it will be seen that forest fires of railway origin are greatly decreasing, as the following figures will show:

Fires of railway origin 1917—49.5 per cent.

Fires of railway origin 1918—46.5 per cent.

Fires of railway origin 1919—37.0 per cent.

Fires of railway origin 1920—23.9 per cent.

The above improvement is due to increased protective methods applied along railway lines, but evidently from the report it is greatly owing to the increased efficiency of locomotive inspection work. This work, which is carried out by provincial officers under the jurisdiction of the Board of Railway Commissioners of Canada, is assisting to a large extent in the elimination of railway fires.

One interesting feature of the report is the fact that 65.5 per cent. of the season's fires originated in cut-over areas in which the logging slash created a serious fire hazard. This again emphasizes the necessity for further measures in connection with the solving of the slash disposal problem.

During the past season 6,154 permits were issued for the burning of slash. The slash on 22,767 acres was burned under the issuing of these permits.

#### FOREST INVESTIGATION.

The Forestry Branch has carried on during the past season a new line of work in connection with forest survey and land classification. This work is being done in the southern part of the Huron and Ottawa region, covering the southern portion of the Fire District. The survey is being done to differentiate forest land from agricultural land and to record the various features of the region from the standpoint of future forest management. One million seven hundred and twenty thousand acres were covered during the past season, and it is predicted that all of the region south of Lake Nipissing will be finished during the coming season. This is the first work done in connection with the plan of a definite forest reconnaissance of the Province.

#### REFORESTATION.

The work connected with reforestation has been enlarged along the following lines. The equipment and nursery organization at the Provincial Forest Station at Norfolk has been enlarged in order to meet the growing demands for forest planting stock. During the past season the Forestry Branch were able to secure a very fine lot of native forest tree seeds, which will be used in the further production of nursery stock to facilitate this work. The distribution of trees was again carried on, over some 130,000 trees having been shipped out to various applicants. It is interesting to note that these forest plantations, which are made by way of demonstration, and for educational purposes, are having a splendid effect in influencing local opinion along these lines.

#### TREE DISEASES.

During last summer Dr. J. H. Faull continued his investigations of diseases of trees in Northern Ontario, his chief work being connected with studies of commercial trees in Temagami Forest Reserve region. Details of this work are given in the Forestry Branch Report, and evidently the problem of forest tree diseases will require considerable investigation as it appears that it will influence future cutting methods and policy as to future sales. See Appendix No. 48, page 206.

BENIAH BOWMAN,

*Minister.*

Department of Lands and Forests,  
Toronto, October 31st, 1920.

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# APPENDICES

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## Appendix No. 1.

Return of Officers and Clerks of the Department of Lands and Forests for the year ending October 31st, 1920.

Branch.	Name.	Designation.	When Appointed.	Salary per annum.	Remarks.
Lands Branch.....	Hon. G. H. Ferguson.....	Minister .....	1914, Dec. 22.....	\$6,000 00	
	Hon. Beniah Bowman.....	do .....	1919, Nov. 14.....	6,000 00	
	Albert Grigg.....	Deputy Minister .....	1915, Oct. 18.....	5,100 00	
	C. C. Hele.....	Minister's Secretary and Secretary to Department..			
	F. J. Niven.....	Minister's Secretary and Secretary to Department..	1911, Oct. 19.....	2,700 00	Resigned December 31, 1919.
			1897, Dec. 15.....	3,000 00	Transferred from Woods and Forests Branch, December 31, 1919.
	H. M. Robbins.....	Assistant to Deputy Minister.	1917, Feb. 19.....	2,400 00	Resigned August 31, 1920.
	W. C. Cain.....	do .....	1903, Mar. 1.....	3,300 00	Transferred from Lands
	F. E. Titus.....	Law Clerk .....	1920, Mar. 2.....	3,500 00	Branch July 9, 1920.
	W. A. Fleming.....	Clerk .....	1914, Apr. 30.....	1,100 00	
	R. P. Ferguson.....	Stenographer .....	1918, Apr. 2.....	1,100 00	
	B. Beley .....	do .....	1920, Jan. 5.....	1,050 00	
	J. J. Murphy.....	Advisory Chief Clerk .....	1872, May 1.....	2,300 00	
	H. E. Johnston .....	Clerk of Military Grants....	1905, Mar. 25.....	1,900 00	
	W. R. Ledger .....	Clerk of Sales .....	1894, Feb. 15.....	1,900 00	
	S. Draper .....	Clerk of Free Grants.....	1900, May 1.....	1,900 00	
	S. A. Platt .....	Clerk .....	1905, June 12.....	1,500 00	
	F. A. Lucas .....	do .....	1906, Dec. 18.....	1,500 00	
	J. E. Drinkwater.....	do .....	1915, Oct. 19.....	1,500 00	
	C. S. Jones .....	Clerk of Patients .....	1890, May 22.....	2,150 00	
	W. S. Sutherland .....	Engrossing Clerk .....	1900, Mar. 18.....	1,600 00	
	C. E. Burns .....	Reference Clerk .....	1897, July 29.....	1,900 00	
	W. Carrell .....	Engrossing Clerk .....	1899, Dec. 18.....	1,600 00	
	A. E. Robillard .....	do .....	1894, May 4.....	1,400 00	
	A. E. Roe .....	Clerk of Registers .....	1906, Oct. 16.....	1,700 00	
	S. Ross .....	Stenographer .....	1917, July 9.....	1,100 00	
	M. Bengough .....	do .....	1896, Oct. 23.....	1,200 00	
	E. F. O'Neil .....	do .....	1902, July 7.....	1,100 00	
	E. G. Halliday .....	do .....	1907, Feb. 21.....	1,100 00	
	B. M. Benson.....	do .....	1909, May 25.....	1,100 00	
	E. Hills .....	do .....	1912, July 2.....	1,100 00	
	E. Singleton.....	do .....	1917, Apr. 16.....	975 00	

Surveys.....	L. V. Rorke .....	Director .....	1909, May 1.....	4,200 00
	J. Hutcheon .....	Surveyor and Draughtsman .....	1913, Apr. 1.....	3,150 00
	W. F. Lewis .....	Clerk .....	1872, Mar. 1.....	1,400 00
	D. G. Boyd .....	Draughtsman .....	1896, Oct. 16.....	2,200 00
	E. M. Jarvis .....	Clerk .....	1897, Apr. 25.....	1,650 00
	J. B. Proctor .....	do .....	1897, Jan. 15.....	1,500 00
	B. E. Rushford .....	Draughtsman .....	1910, Jan. 24.....	1,700 00
	F. E. Blanchet .....	do .....	1906, May 15.....	1,700 00
	A. Leaman .....	do .....	1907, Sept. 12.....	1,700 00
	H. Treeby .....	do .....	1896, Jan. 25.....	1,800 00
Woods and Forests.....	J. Work .....	do .....	1909, May 18.....	1,900 00
	M. H. Kirkland .....	Stenographer .....	1902, July 21.....	1,100 00
	C. O'Connor .....	do .....	1907, Oct. 16.....	900 00
	E. C. Arner .....	do .....	1909, Aug. 6.....	1,050 00
	J. A. G. Crozier .....	Advisory Chief Clerk .....	1867, Dec. 1.....	2,300 00
	J. Houser .....	Chief Clerk .....	1905, July 17.....	2,400 00
	J. B. Cook .....	Clerk .....	1894, Aug. 7.....	1,950 00
	H. Gillard .....	do .....	1897, Dec. 6.....	1,900 00
	W. F. Trivett .....	do .....	1900, June 25.....	2,000 00
	R. H. Hodgson .....	do .....	1903, Oct. 15.....	1,450 00
Accounts.....	A. H. O'Neil .....	do .....	1906, July 19.....	1,600 00
	S. D. Meeking .....	do .....	1910, Feb. 8.....	1,400 00
	E. H. Squire .....	do .....	1916, Jan. 4.....	1,300 00
	E. H. Telfer .....	do .....	1915, Sept. 27.....	1,400 00
	M. E. Bliss .....	Stenographer and Filing Clerk to Deputy Minister .....	1909, Aug. 16.....	1,200 00
	C. Rowland .....	Stenographer .....	1912, May 1.....	1,100 00
	H. Canton .....	do .....	1915, May 11.....	875 00
	S. O. Dennis .....	do .....	1910, Mar. 2.....	1,000 00
	J. Ferguson .....	do .....	1919, Aug. 4.....	850 00
	J. McCort .....	do .....	1918, Feb. 28.....	975 00
Accounts.....	D. G. Ross .....	Accountant .....	1861, Apr. 15.....	3,000 00
	H. M. Lount .....	Clerk .....	1903, Oct. 1.....	2,100 00
	C. J. Clarke .....	do .....	1905, Aug. 9.....	1,600 00
	R. Gordon .....	do .....	1912, July 30.....	1,400 00
	W. A. Burritt .....	do .....	1907, Sept. 24.....	1,600 00
	C. Bowland .....	Clerk and Stenographer .....	1908, July 9.....	1,100 00
				Resigned November 30, 1919.
				Transferred from Department of Agriculture August 1, 1920.

Appendix No. 1.—*Concluded.*

Return of Officers and Clerks of the Department of Lands and Forests for the year ending October 31st, 1920.

Branch.	Name.	Designation.	When appointed.	Salary per annum.	Remarks.
Forestry	E. J. Zavitz	Provincial Forester	1912, Nov. 7	\$4,500 00	
	F. S. Newman	Forester	1913, Sept. 22	2,300 00	
	G. W. Harris	Clerk	1906, Sept. 1	1,500 00	
	N. L. Rogers	do	1911, Aug. 1	1,700 00	
Records	J. Bald	Stenographer	1913, June 12	1,100 00	
	S. K. Burdin	Chief Clerk	1916, Apr. 6	2,500 00	
	C. Dies	Clerk	1905, Oct. 2	1,500 00	
	A. P. Saunders	do	1912, May 13	1,300 00	Resigned November 30, 1919.
Colonization	C. W. St. John	do	1906, July 9	1,250 00	
	A. Ferguson	do	1915, Dec. 15	1,600 00	
	W. B. Baines	do	1912, Apr. 9	1,400 00	
	F. Samuels	do	1903, Dec. 5	1,500 00	
Roads	N. Mathewson	do	1915, May 7	1,300 00	
	H. Brophy	Mailing Clerk, etc.	1915, Oct. 1	1,150 00	
	C. H. Fullerton	Superintendent	1915, Oct. 15	4,400 00	
	M. P. Doherty	Accountant and Chief Clerk.	1898, May 1	2,100 00	
D. GEO. ROSS, Accountant.	C. H. Meader	Surveyor and Draughtsman.	1912, June 14	2,400 00	
	J. H. Bradshaw	Clerk	1884, June 10	1,400 00	
	A. Gamey	do	1914, July 19	1,200 00	
	P. Godkin	Stenographer	1917, Aug. 27	1,050 00	

ALBERT GRIGG,  
Deputy Minister of Lands and Forests.

## Appendix No. 2.

List of Agents for the year ending October 31st, 1920.

Name.	Post office address	District or County.	Date of appointment.	Salary per annum.	Remarks.
<i>Land Agents.</i>					
Anderson, T. V. ....	Hearst.....	Part District of Algoma .....	1913, May 9	\$800 00	
Arthurs, E. ....	Espanola Mills....	do do .....	1915, May 7	500 00	
Baker, R. H. ....	Minden.....	Part Victoria .....	1907, Oct. 1	350 00	
Bolger, J. W. ....	New Liskeard.....	Lake Temiskaming, District of Nipissing....	1913, July 17	1,200 00	
Both, C. ....	Denbigh.....	Part of Frontenac and Addington.....	1905, Oct. 20	200 00	
Brown, John .....	Markstay.....	do District of Nipissing and Sudbury.....	1916, June 27	600 00	
Brown, J. B. ....	Bracebridge.....	Muskoka District .....	1905, July 28		For salary see Homestead Inspector.
Burrows, W. A. ....	Port Arthur.....	Part District of Thunder Bay .....	1912, Jan. 30	1,000 00	Died May 27, 1920.
Cameron, W. ....	Stratton Station....	do do .....	1911, Apr. 27	500 00	
Campbell, I. M. ....	Parry Sound.....	do do .....	1914, Nov. 12	500 00	
Dempsey, S. J. ....	Cochrane.....	do do .....	1911, Feb. 9	1,100 00	
Dodds, T. ....	Thessalon.....	do do .....	1915, May 4	500 00	
Douglas, W. J. ....	Maynooth.....	do Hastings .....	1912, June 12	500 00	
Ellis, H. J. ....	Powassan.....	do District of Parry Sound .....	1909, May 21	500 00	
Freeborn, Dr. J. S. ....	Magnetawan.....	do do .....	1905, Nov. 10	500 00	
Gibson, J. E. ....	Dryden.....	do District of Rainy River .....	1914, Nov. 20	1,000 00	
Ginn, F. E. ....	Matheson.....	Part District of Nipissing .....	1912, Mar. 20	1,200 00	
Hales, W. ....	Aspley.....	do County of Peterborough .....	1911, July 20	250 00	
Hollands, C. J. ....	Fort Frances.....	do Township of Alberta and District of Rainy River .....	1892, Oct. 12	300 00	
McFayden, A. ....	Emo.....	do District of Rainy River .....	1905, Sept. 8	600 00	
MacLennan, J. K. ....	Sudbury.....	do do .....	1905, July 3	700 00	
Noble, E. ....	Sault Ste. Marie....	do do .....	1913, Feb. 1	300 00	Died October 25, 1920.
O'Flaherty, T. F. ....	Kenora.....	do do .....	1920, May 10	600 00	Also Mining Recorder.
Parsons, W. J. ....	North Bay.....	do do .....	1908, Apr. 8	1,000 00	
Philton, J. A. ....	Sturgeon Falls....	do do .....	1907, Sept. 13	500 00	
Prince, A. ....	Wilno.....	do of Renfrew .....	1905, July 12	500 00	Resigned April 30, 1920.
Small, R. ....	Mattawa.....	do District of Nipissing .....	1910, June 30	500 00	
Spry, W. L. ....	Kenora.....	do do .....	1909, Sept. 21	600 00	Also Mining Recorder. Died April 3, 1920.
Teasdale, R. A. ....	Massey.....	do do .....	1917, July 1	600 00	
Thaw, D. ....	Emisdale.....	do do .....	1919, July 2	500 00	
Watt, F. ....	Pembroke.....	do of Renfrew .....	1913, May 28	300 00	
Whybourne, W. E. ....	Marksville.....	do of St. Joseph Island .....	1905, Apr. 7	300 00	



Appendix No. 2.—*Concluded.*

List of Agents for the year ending October 31st, 1920.

Name.	Post office address	District or County.	Date of appointment.	Salary per annum.	Remarks.
Wilson, A. N.....	Kinmount.....	Part District of Peterborough	1915, June 1	175 00	
Woollings, J. ....	Englehart.....	do of District of Nipissing	1908, June 30	800 00	
<i>Homestead Inspectors.</i>					
Barr, J. ....	Fort Frances.....	District of Rainy River	1906, Nov. 23	1,400 00	
Bastien, J. A. ....	Chelmsford.....	W. part of Sudbury District	1913, May 2	1,200 00	
Brown, J. B. ....	Bracebridge.....	Muskoka District	1905, July 28	1,100 00	
Burnes, C. W. ....	South River.....	Parry Sound District	1905, Nov. 15	1,000 00	Also Crown Lands Agent.
Cragg, W. V. ....	New Liskeard.....	S. part of Temiskaming District	1913, Mar. 27	1,400 00	Resigned April 30, 1920.
Dean, T. ....	Sault Ste. Marie..	Algoma District	1908, July 29	900 00	
Hughes, T. ....	Murillo.....	Thunder Bay District	1908, July 20	1,300 00	
Jervis, H. F. J. W..	Callander.....	District of Parry Sound	1920, June 10	1,500 00	
Owens, H. B. ....	Cache Bay.....	E. part Sudbury and W. part Algoma Districts.			
Smith, D. ....	Cochrane.....	N. part of Temiskaming District	1918, June 25	1,000 00	
Van Horn, L. E. ....	Monteith.....	Part Temiskaming and Algoma Districts	1912, Apr. 16	1,700 00	
Watson, T. P. ....	Englehart.....	Centre part of Temiskaming District	1920, Jan. 27	1,500 00	
Wigle, R. G. ....	Dryden.....	Kenora District	1905, May 10	1,400 00	
		1914, May 27	1,400 00		
<i>Timber Agents.</i>					
Brenner, G. ....	Cochrane.....	Part Temiskaming and Algoma Districts	1913, May 20	1,800 00	
Christie, W. P. ....	Parry Sound.....	Part Parry Sound and Muskoka Districts	1903, Dec. 4	1,700 00	Resigned July 31, 1920.
Darby, E. J. ....	Ottawa.....	Part Ottawa District	1889, July 26	1,500 00	
Hawkins, S. J. ....	Webbwood.....	Part Algoma and Sudbury Districts	1905, Aug. 16	1,900 00	
Henderson, C. ....	Sudbury.....	do	1902, Jan. 1	2,100 00	
Huckson, A. H. ....	Sault Ste. Marie..	Part District of Algoma	1914, Apr. 1	2,100 00	
Jones, W. M. ....	Fort Frances.....	Rainy River District	1918, Nov. 15	1,700 00	
MacDonald, S. C. ....	New Liskeard.....	Part Temiskaming District	1907, Jan. 1	2,000 00	
Margach, W. ....	Kenora.....	Kenora District	1889, May 16	1,600 00	
McDonald, H. ....	Thessalon.....	Part District of Algoma	1905, Apr. 20	1,500 00	
McDougall, J. T. ....	North Bay.....	Nipissing and part Sudbury Districts	1908, July 8	2,100 00	
Oliver, J. A. ....	Port Arthur.....	Thunder Bay District	1905, Sept. 30	1,850 00	
Stevenson, A. ....	Peterborough.....	Belleville	1905, Oct. 4	1,800 00	
Wood, W. G. A. ....	South Porcupine..	Porcupine District	1917, Feb. 28	1,600 00	

D. GEO. ROSS,  
Accountant.

ALBERT GRIGG,

Deputy Minister of Lands and Forests.

*Appendix No. 3.*

Statement of Lands Sold and Leased. Amount of Sales and Leases and Amount of Collections for the year ending October 31st, 1920.

Service.	Acres sold and leased.	Amount of sales and leases.	Collection on sales and leases.
<i>Lands Sold:</i>		\$ c.	\$ c.
Agricultural and Townsites.....	72,591 08	69,956 87	81,480 12
Clergy Lands .....	82 00	57 40	862 21
Common School Lands .....	146 25	200 77	5,527 74
Grammar School Lands .....	151 00	231 00	756 16
University Lands.....	720 87	360 44	1,806 18
<i>Lands Leased:</i>			
Crown.....	10,661 18	1,845 06	58,444 18
Temagami .....	27 43	310 00	1,139 00
	84,379 81	72,961 54	150,015 59

D. GEO. ROSS,  
Accountant.

ALBERT GRIGG,  
Deputy Minister of Lands and Forests.

*Appendix No. 4.*

Statement of Revenue of the Department of Lands and Forests for the year ending  
October 31st, 1920.

Service.	\$	c.	\$	c.	\$	c.
<b>LAND COLLECTIONS.</b>						
<i>Crown Lands:</i>						
Agricultural .....	72,831	80				
Townsites .....	8,648	32				
			81,480	12		
Clergy Lands .....	862	21				
Common School Lands .....	5,527	74				
Grammar School Lands .....	756	16				
University Lands .....	1,806	18				
			8,952	29		
<i>Rent:</i>					90,432	41
Crown Leases .....			57,195	33		
Algonquin Provincial Park .....			1,248	85		
Temagami Leases .....			1,139	00		
					59,583	18
<b>WOODS AND FORESTS.</b>						
Bonus .....			1,143,725	18		
Timber Dues .....			1,171,692	14		
Ground Rent .....			105,398	88		
Transfer Fees .....			7,640	00		
Fire Protection .....			228,174	31		
					2,656,630	51
<i>Parks:</i>						
Algonquin Provincial Park .....			69,524	07		
Rondeau Provincial Park .....			657	77		
Quetico Provincial Park .....			719	00		
					70,900	84
Casual Fees .....			2,112	61		
Cullers' Fees .....			188	00		
Forest Reserves Guides' Fees .....			378	00		
					2,678	61
<b>REFUNDS.</b>						
Fire Ranging .....			14,972	60		
Forest Ranging .....			13,241	05		
Agents' Salaries .....			100	00		
Insurance .....			3	08		
Surveys .....			50	00		
Emigration Work, Great Britain .....			2,402	45		
Printing and Advertising .....			2	40		
Contingencies, Lands .....			50	00		
					30,821	58
					2,911,047	13

D. GEO. ROSS,  
Accountant.

ALBERT GRIGG,  
Deputy Minister of Lands and Forests.

*Appendix No. 5.*

Statement of Receipts of the Department of Lands and Forests for the year ending October 31st, 1920, which are considered as Special Funds.

Service.	\$ c.	\$ c.
<i>Clergy Lands.</i>		
Principal .....	450 70	
Interest .....	411 51	862 21
<i>Common School Lands.</i>		
Principal .....	3,228 30	
Interest .....	2,299 44	5,527 74
<i>Grammar School Lands.</i>		
Principal .....	385 90	
Interest .....	370 26	756 16
<i>University Lands.</i>		
Principal .....	1,164 52	
Interest .....	641 66	1,806 18
		8,952 29

D. GEO. ROSS,  
Accountant.

ALBERT GRIGG,  
Deputy Minister of Lands and Forests.



*Appendix No. 6.*

Statement of Disbursements of the Department of Lands and Forests for the year ending October 31st, 1920.

Service.	\$	c.	\$	c.	\$	c.
<b>AGENTS' SALARIES AND DISBURSEMENTS.</b>						
<i>Land, \$20,120.72.</i>						
Anderson, T. V. ....	800	00				
Disbursements .....	153	75				
			953	75		
Arthurs, E. ....			254	41		
Baker, R. H. ....	350	00				
Disbursements .....	5	77				
			355	77		
Bolger, J. W. ....	1,200	00				
Disbursements .....	217	97				
			1,417	97		
Both, C. ....			200	00		
Brown, John ....	600	00				
Disbursements .....	21	99				
			621	99		
Burrows, W. A. ....	583	00				
Disbursements .....	358	48				
			941	48		
Cameron, W. ....	500	00				
Disbursements .....	26	00				
			526	00		
Campbell, Miss I. M. ....	500	00				
Disbursements .....	18	00				
			518	00		
Dempsey, S. J. ....	1,100	00				
Disbursements .....	57	00				
			1,157	00		
Dodds, T. ....	500	00				
Disbursements .....	10	00				
			510	00		
Douglas, W. J. ....	500	00				
Disbursements .....	21	00				
			521	00		
Ellis, H. J. ....			500	00		
Freeborn, J. S. ....	500	00				
Disbursements .....	19	00				
			519	00		
Gibson, J. E. ....	1,000	00				
Disbursements .....	182	00				
			1,182	00		
Ginn, F. E. ....	1,200	00				
Disbursements .....	97	95				
			1,297	95		
Hales, W. ....	250	00				
Disbursements .....	19	50				
			269	50		
Hollands, C. J. ....	300	00				
Disbursements .....	90	00				
			390	00		
McFayden, A. ....	600	00				
Disbursements .....	38	47				
			638	47		
MacLennan, J. K. ....			700	00		
Carried forward .....			13,474	29		

*Appendix No. 6.—Continued.*

Service.	\$	c.	\$	c.	\$	c.
<i>Brought forward</i> .....			13,474	29		
<i>AGENTS' SALARIES AND DISBURSEMENTS—Continued.</i>						
<i>Land—Concluded.</i>						
Noble, E. ....	300	00				
Disbursements .....		12 30				
			312	30		
Parsons, W. J. ....	1,000	00				
Disbursements .....		169 00				
			1,169	00		
Philion, J. A. ....	500	00				
Disbursements .....		29 02				
			529	02		
Prince, A. ....	333	32				
Disbursements .....		40 00				
			373	32		
Small, R. ....	500	00				
Disbursements .....		23 25				
			523	25		
Spry, W. L. ....	300	00				
Disbursements .....		193 50				
			493	50		
O'Flaherty T. F. ....	276	30				
Disbursements .....		96 75				
			373	05		
Teasdale, R. A. ....	600	00				
Disbursements .....		4 77				
			604	77		
Thaw, D. ....	500	00				
Disbursements .....		6 27				
			506	27		
Watt, F. ....			300	00		
Whybourne, W. E. ....	300	00				
Disbursements .....		8 45				
			308	45		
Woollings, J. ....	800	00				
Disbursements .....		165 00				
			965	00		
Wilson, A. N. ....	175	00				
Disbursements .....		13 50				
			188	50		
<i>Homestead Inspectors, \$21,725.39.</i>						
Barr, J. ....	1,400	00				
Disbursements .....		681 12				
			2,081	12		
Bastien, J. A. ....	1,200	00				
Disbursements .....		516 15				
			1,716	15		
Brown, J. B. ....	1,100	00				
Disbursements .....		443 85				
			1,543	85		
Burns, C. W. ....	500	00				
Disbursements .....		206 15				
			706	15		
Cragg, W. V. ....	1,400	00				
Disbursements .....		440 72				
			1,840	72		
Dean, T. ....	900	00				
Disbursements .....		306 65				
			1,206	65		
<i>Carried forward</i> .....			29,215	36		

*Appendix No. 6.—Continued.*

Service.	\$ c.	\$ c.	\$ c.
<i>Brought forward</i> .....	.....	29,215 36	
<i>AGENTS' SALARIES AND DISBURSEMENTS—Continued.</i>			
<i>Homestead Inspectors—Concluded.</i>			
Hughes, T. ....	1,300 00		
Disbursements .....	524 60	1,824 60	
Jervis, H. F. J. W. ....	586 30		
Disbursements .....	204 25	790 55	
Owens, H. B. ....	1,000 00		
Disbursements .....	893 45	1,893 45	
Smith, D. ....	1,700 00		
Van Horn, L. E., Assistant. ....	1,144 31		
Disbursements .....	1,119 44	3,963 75	
Watson, T. P. ....	1,400 00		
Disbursements .....	657 45	2,057 45	
Wigle, R. G. ....	1,400 00		
Disbursements .....	682 27	2,082 27	
<i>Timber, \$33,709.64.</i>			
Bremner, G. ....	1,350 00		
Disbursements .....	465 64	1,815 64	
Christie, W. P. ....	1,700 00		
Disbursements .....	345 71	2,045 71	
Hawkins, S. J. ....	1,900 00		
Disbursements .....	275 35	2,175 35	
Henderson, C. ....	2,100 00		
Disbursements .....	303 82	2,403 82	
Huckson, A. H. ....	2,100 00		
Disbursements .....	346 50	2,446 50	
Jones, W. M. ....	1,700 00		
McDonald, A. ....	1,500 00		
Disbursements .....	370 45	3,570 45	
MacDonald, S. C. ....	2,000 00		
Disbursements .....	195 15	2,195 15	
Margach, W. ....	1,600 00		
Legris, J., Assistant .....	1,900 00		
Cunningham, Mrs. E. A., Stenographer .....	382 75		
Doan, Mrs. M., Stenographer .....	98 00		
Robinson, Miss E. do .....	14 00		
Rose, Miss M. do .....	21 00		
Disbursements .....	670 68	4,686 43	
McDonald, H. ....	1,600 00		
Disbursements .....	157 77	1,757 77	
McDougall, J. T. ....	2,100 00		
Disbursements .....	389 62	2,489 62	
<i>Carried forward</i> .....	.....	67,413 87	

*Appendix No. 6.—Continued.*

Service.	\$	c.	\$	c.	\$	c.
<i>Brought forward</i> .....			67,413	87		
AGENTS' SALARIES AND DISBURSEMENTS— <i>Concluded.</i>						
<i>Timber—Concluded.</i>						
Oliver, J. A. ....	1,850	00				
Godfrey, Miss S., Stenographer .....	722	31				
Keefer, Miss O., Stenographer .....	36	93				
Disbursements .....	554	77				
			3,164	01		
Stevenson, A. ....	1,800	00				
Disbursements .....	377	26				
			2,177	26		
Whelan, P. J., disbursements .....			642	31		
Wood, W. G. A. ....	1,600	00				
Disbursements .....	558	30				
			2,158	30		
<i>Miscellaneous, \$1,607.70.</i>						
Edmond, John, inspecting certain lands in the Townships of Gorham and Ware .....			28	75		
Green, H. P., Caretaker, Islands in Charlston Lake .....			50	00		
Jamieson, W. H., Caretaker, Islands in Dog and Latoria Lakes .....			50	00		
McArthur, T. A., Inspector of Agencies .....	900	00				
Disbursements .....	578	95				
			1,478	95		
					77,163	45
OTTAWA AGENCY.						
Darby, E. J., Agent .....			1,500	00		
Larose, S. C., Clerk .....			1,200	00		
Rent .....	700	00				
Disbursements .....	66	03				
			766	03		
					3,466	03
CULLERS' ACT.						
Margach, W. ....Services .....			8	00		
McDougall, J. T. ....Disbursements .....			14	25		
					22	25
FIRE RANGING .....					504,518	42
FOREST RANGING .....					207,675	13
FOREST RESERVES .....					4,456	36
REFORESTATION .....					47,454	72
ALGONQUIN PROVINCIAL PARK .....					34,739	55
QUETICO PROVINCIAL PARK .....					10,260	90
<i>Carried forward</i> .....					889,756	81



*Appendix No. 6.—Continued.*

Service.	\$	c.	\$	c.	\$	c.
<i>Brought forward</i> .....					889,756	81
RONDEAU PROVINCIAL PARK .....					9,736	57
PURCHASE AND MAINTENANCE OF AUTOMOBILES, ...					2,084	49
SURVEYS .....					150,700	97
COLONIZATION ROADS .....					451,808	59
BOARD OF SURVEYORS .....					200	00
GRANT TO CANADIAN FORESTRY ASSOCIATION .....					1,000	00
ANNUAL MEMBERSHIP FEES .....					39	97
INSURANCE .....					417	72
COMMISSIONS RE SUNDRY INVESTIGATIONS .....					50,000	00
WORKMEN'S COMPENSATION .....					394	64
UNFORESEEN AND UNPROVIDED .....					60	75
SPECIAL WARRANTS.						
Hurdman, G. G. ....			5,680	00		
Brown, Mrs. Ella .....			210	00		
					5,890	00
MISCELLANEOUS.						
Maughan, Mrs. H. L., gratuity .....					875	00
REFUNDS (Miscellaneous) .....					15,757	74
CONTINGENCIES, PLANS, MAPS, ETC.						
<i>Departmental.</i>						
Printing and binding .....	4,771	63				
Stationery .....	8,068	22				
					12,839	85
Express .....	346	44				
Postage .....	2,213	43				
					2,559	87
Telegraphing .....	908	18				
Car Fare .....	50	00				
					958	18
Subscriptions .....	254	71				
Advertising .....	2,509	25				
					2,763	96
Typewriter repairs and inspections .....					205	90
Hutcheon, J., disbursements .....	7	80				
Work, J., services .....	61	60				
					69	40
Extra Clerks .....	11,023	98				
Maps .....	5,874	38				
Sundries .....	371	80				
					17,270	16
					36,667	32
<i>Carried forward</i> .....					1,615,390	57

*Appendix No. 6.—Continued.*

Service.	\$ c.	\$ c.	\$ c.
<i>Brought forward</i> .....			1,615,390 57
<i>Travelling Expenses.</i>			
Bowman, Hon. Beniah .....		1,110 52	
Cain, W. C. ....		71 40	
Grigg, A. ....		98 50	
Hutcheon, J. ....		454 27	
Niven, F. J. ....		160 45	
Robbins, H. M. ....		150 00	
Rorke, L. V. ....		374 93	
Work, J. ....		299 35	
Sundries .....		2 00	
			2,721 42
<i>TYPEWRITERS, OFFICE EQUIPMENT, ETC.</i>			
United Typewriter Company .....			422 00
<i>Forestry Contingencies.</i>			
Printing and Binding .....	140 30		
Stationery .....	880 73		
		1,021 03	
Postage .....	205 00		
Telegraphing .....	58 76		
Express and Cartage .....	59 58		
Typewriter, inspections and repairs .....	22 00		
		345 34	
Extra Clerks .....	327 50		
Supplies .....	385 49		
Sundries .....	14 13		
		727 12	
			2,093 49
<i>Travelling Expenses.</i>			
Newman, F. S. ....			18 45
<i>COLONIZATION ROAD CONTINGENCIES.</i>			
Printing and binding .....	327 54		
Stationery .....	736 66		
		1,064 20	
Postage .....	160 42		
Express .....	4 70		
		165 12	
Telegraphing .....	105 45		
Subscriptions .....	12 14		
Typewriter, inspections and repairs .....	35 50		
		153 09	
Extra Clerks .....	1,786 96		
Sundries .....	53 65		
		1,840 61	
			3,223 02
<i>Travelling Expenses.</i>			
Fullerton, C. H. ....		200 52	
Meader, C. H. ....		736 04	
			936 56
			1,624,805 51

## Appendix

## WOODS AND

## Statement of Timber and Amounts accrued from Timber Dues, Ground

## QUANTITY AND

Agencies.	Area covered by timber licenses.	Saw logs.				Boom and	
		Pine.		Other.		Pine.	
	Square miles.	Pieces.	Feet B.M.	Pieces.	Feet B.M.	Pieces.	Feet.
Western Timber District .....	9,578	8,009,862	277,823,470	1,044,322	33,120,876	23,225	3,459,426
Belleville Timber District .....	696 $\frac{3}{4}$	47,615	1,105,051	132,874	4,238,767	86,892	1,387,121
Ottawa Timber District .....	4,620 $\frac{1}{2}$	540,095	24,221,618	478,831	13,428,889	3,344	464,689
	14,895 $\frac{1}{4}$	8,597,572	303,150,139	1,656,027	50,788,532	113,461	5,311,236

## General Statement

Agencies.	Tan Bark.	Railway Ties.	Shingle Bolts.	Cedar Posts.	Tele-graph Poles.	Pulp-wood.		
	Cords.	Pieces.	Cords.	Pieces.	Pieces.	Cords.	Transfer Fees.	Interest.
Western Timber District .....	2,193 $\frac{1}{2}$	6,070,883	3	27,457	10,977	288,955	\$ 7,270 00	c. 18,500 44
Belleville Timber District .....	235	5,403	.....	6,156	16	387	365 00	4 93
Ottawa Timber District .....	1,011	26,001	.....	16,104	7,061	17,354	5 00	632 43
	3,439 $\frac{1}{2}$	6,102,287	3	49,717	18,054	306,696	7,640 00	19,137 80

JOHN HOUSER,  
Chief Clerk in charge.

No. 7.

## FORESTS.

Rent and Bonus during the year ending 31st October, 1920.

## DESCRIPTION OF TIMBER.

Dimension.		Square Timber.		Pine.	Piling. *			Cedar.	Cordwood.	
Other.									Hard.	Soft.
Pieces.	Feet B.M.	Pieces.	Cubic Feet.	Lineal Feet.	Lineal feet.	Pieces.	Feet B.M.	Lineal Feet.	Cords.	Cords.
104,62	1,115,432	7,176	365,086	27,368	176,059	4,852	468,296	13,609	13,065	23,214
810	174,923	.....	.....	.....	.....	.....	.....	.....	144	9
4,507	614,611	.....	.....	.....	.....	.....	.....	.....	18	1,937
15,779	1,904,966	7,176	365,086	27,368	176,059	4,852	468,296	13,609	13,227	25,160

of Timber.—Concluded.

## Amounts accrued.

Trespass.	Timber dues.	Bonus.	Deposit timber sales.	Ground rent.	Fire protection.	Total.
\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.
53,767 89	1,204,984 11	1,219,548 78	211,848 00	74,691 75	188,411 21	2,979,022 18
3,263 02	8,295 16	389 38	.....	4,175 00	5,241 60	21,734 09
567 17	57,906 04	.....	.....	26,420 00	34,521 50	120,052 14
57,598 08	1,271,185 31	1,219,938 16	211,848 00	105,286 75	228,174 31	3,120,808 41

ALBERT GRIGG,  
Deputy Minister.



*Appendix No. 8.*

## PATENTS OFFICE (Lands Branch).

Statement of Patents, etc., issued from 1st November, 1919, to 31st October, 1920.

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Public Lands (late Crown) .....	561
“ “ (late School) .....	31
“ “ (late Clergy Reserves) .....	6
“ “ (University) .....	5
Free Grant Lands (Act of 1913) .....	354
“ “ “ (Act of 1901) Veterans .....	79
Mining Lands (Patents) .....	409
Mining Leases .....	116
Crown Leases .....	21
Licenses of Occupation .....	54
Temagami Island Leases .....	15
Sand and Gravel Licenses .....	19
Pine Patents .....	5
Quarry Claims .....	1
Orders-in-Council .....	4
<hr/>	
Total.....	1,680

C. S. JONES,  
Clerk of Patents.

ALBERT GRIGG,  
Deputy Minister of Lands and Forests.

W. C. CAIN,  
Chief Clerk in Charge.

## Appendix No. 9.

## WOODS AND FORESTS BRANCH.

Statement of Revenue collected during the year ending October 31st, 1920.

Amount of Western Collections at Department .....	\$2,531,137 18
“ Belleville Collections at Department .....	16,625 32
“ Ottawa Collections at Department .....	108,868 01
	<hr/>
	\$2,656,630 51

## WOODS AND FORESTS.

Bonus .....	\$1,143,725 18
Timber dues .....	1,171,692 14
Ground rent .....	105,398 88
Transfer fees .....	7,640 00
Fire protection .....	228,174 31
	<hr/>
	\$2,656,630 51

## WOODS AND FORESTS BRANCH REVENUE.

October 31st, 1920.

## WESTERN DISTRICT—

Timber dues .....	\$1,098,718 60
Bonus .....	931,697 18
Ground rent .....	74,691 75
Interest on dues .....	18,460 24
Interest on ground rent .....	40 20
Transfer fees .....	7,270 00
Timber sale deposit .....	211,848 00
Fire protection .....	188,411 21
	<hr/>
	\$2,531,137 18

## OTTAWA DISTRICT—

Timber dues .....	\$47,289 08
Ground rent .....	26,420 00
Interest on dues .....	560 50
Interest on ground rent .....	71 93
Transfer fees .....	5 00
Fire protection .....	34,521 50
	<hr/>
	\$108,868 01

## BELLEVILLE DISTRICT—

Timber dues .....	\$6,658 79
Bonus .....	180 00
Ground rent .....	4,175 00
Interest on timber dues .....	4 93
Transfer fees .....	365 00
Fire protection .....	5,241 60
	<hr/>
	\$16,625 32
	<hr/>
	\$2,656,630 51

JOHN HOUSER,  
Chief Clerk in Charge.

ALBERT GRIGG,  
Deputy Minister.

*Appendix 10.*

## Memorandum of parties who passed the Cullers' Examination in 1920.

Allanson, J. G., Osaquan, Ont., examined at Kenora on the 27th day of August, 1920, licensed October 1st, 1920.

Campbell, G. K., Poplar Dale, Ont., examined at Callander on the 27th day of August, 1920, licensed October 1st, 1920.

Duval, Alex., Sturgeon Falls, Ont., examined at Callander, on the 27th day of August, 1920, licensed October 1st, 1920.

Fry, John T. G., Trout Creek, Ont., examined at Callander on the 27th day of August, 1920, licensed October 1st, 1920.

Leach, Charles, Osaquan, Ont., examined at Kenora on the 27th day of August, 1920, licensed October 1st, 1920.

Morrison, Bert, Field P.O., Ont., examined at Callander on the 27th day of August, 1920, licensed October 1st, 1920.

McDougall, C., McIntosh P.O., Ont., examined at Kenora on the 27th day of August, 1920, licensed October 1st, 1920.

Pritchard, Fred, Norman, Ont., examined at Kenora on the 27th day of August, 1920, licensed October 1st, 1920.

Ross, Alexander, Foleyette, Ont., examined at Callander on the 27th day of August, 1920, licensed October 1st, 1920.

Rudd, W. J., 133 North Marks Street, Fort William, Ont., examined at Kenora on the 27th day of August, 1920, licensed October 1st, 1920.

Spofford, R. L., 322 Van Norman Street, Port Arthur, Ont., examined at Kenora on the 27th day of August, 1920, licensed October 1st, 1920.

Spofford, H. S., 322 Van Norman Street, Port Arthur, Ont., examined at Kenora on the 27th day of August, 1920, licensed October 1st, 1920.

JOHN HOUSER,

*Chief Clerk.*

ALBERT GRIGG,

*Deputy Minister.*

*Appendix 11.*

## Statement of the work done in Military Office, Lands Branch of the Department of Lands and Forests, during the year ending October 31st, 1920.

Reference for Veterans' Patents issued .....	69
Locations under military certificates .....	35
Certificates applied in payment of lands .....	7
Certificates surrendered for commutation money .....	1
Letters received .....	1,410
Letters written .....	1,640
Special letters to agents .....	240
Special letters to mining recorders .....	180
Maps and reports supplied to veterans .....	90
Printed forms sent out .....	100
Copies of Veteran Act supplied .....	40

H. E. JOHNSTON,

*Military Clerk.*

ALBERT GRIGG,

*Deputy Minister.*

W. C. CAIN,

*Chief Clerk in Charge.*

## Appendix No. 12.

## RECORDS BRANCH, 1919-1920.

*Communications received:*

From Crown Lands Agents .....	8,497
“ Crown Timber Agents .....	5,076
“ Mining Recorders .....	2,947
“ Homestead Inspectors .....	2,178
“ Crown Land Inspector of Agencies .....	36
“ Superintendent Algonquin Park .....	198
“ Superintendent Quetico Park .....	77
“ Superintendent Rondeau Park .....	76
Orders-in-Council .....	210
Telegrams .....	203
Soldiers' and Sailors' Letters .....	230
Nickel Commission (figures supplied by them—Nov. and Dec.) .....	50
Northern Development Branch (figures supplied by them) .....	7,745
Loan Commissioner (figures supplied by them) .....	3,219
Forestry Branch (figures supplied by them) .....	20,872
Mining Commissioner (figures supplied by them—Nov. and Dec.) .....	627
Mine Assessor, (figures supplied by them—Nov. and Dec.) .....	875
Provincial Geologist (figures supplied by them—Nov. and Dec.) .....	102
Mine Inspector (figures supplied by them—Nov. and Dec.) .....	211
Colonization Roads (figures supplied by them) .....	6,000
Colonization Branch (figures supplied by them—Nov. 1/19, Mar. 12/20) ...	7,147
All other sources .....	29,047
Total incoming (Minister's office not included) .....	95,623

*Communications sent out:*

To Crown Agents, Inspectors and Park Superintendents .....	22,000
“ General Public .....	21,075
Circular Letters (timber sales) .....	3,537
Maps and Blue Prints .....	4,254
Mining Reports to Foreign Countries (Nov. and Dec.) .....	20
“ “ U. S. and other points (Nov. and Dec.) .....	10
“ Acts (Nov. and Dec.) .....	100
Nickel Commission, Letters (figures supplied by them—Nov. and Dec.) ...	50
“ “ Reports (figures supplied by them—Nov. and Dec.) ..	45
Northern Development Branch (figures supplied by them), Letters .....	7,248
“ “ Branch, Seed Grain (figures supplied by them) .....	1,578
Colonization Br. (figures supplied by them—Nov. 1/19 to Mar. 12/20) ....	4,846
“ “ Northern Ontario Literature (figures supplied by them— Nov. 1/9 to Mar. 12/20) .....	13,189
“ “ Ontario Maps (figures supplied by them—Nov. 1/19, to Mar. 12/20) .....	3,182
Loan Commissioner, Letters (figures supplied by them) .....	6,202
Mining Commissioner, Letters (figures supplied by them—Nov. and Dec.) ..	1,235
“ “ Orders (figures supplied by them—Nov. and Dec.) ..	102
Forestry Branch, Letters (figures supplied by them) .....	4,903
“ “ Parcels by Post (figures supplied by them) .....	451
Mine Assessor, Letters (figures supplied by them—Nov. and Dec.) .....	875
Mine Inspector, Letters (figures supplied by them—Nov. and Dec.) .....	151
Provincial Geologist, Letters (figures supplied by them—Nov. and Dec.) ..	90
Colonization Roads, Letters (figures supplied by them) .....	5,355
Total outgoing (Minister's office not included) .....	100,498

*Postage:*

Postage for the year .....	Records Branch .....	\$2,141 42
“ “ Nov. and Dec. Mines “ .....		185 58
“ “ the year .....	Colonization Branch (Nov. 1, 1920, to Mar. 12, 1920) .....	246 91
“ “ “ .....	Loan Commissioner .....	210 00
“ “ “ .....	Forestry Branch .....	205 00
“ “ “ .....	Colonization Roads .....	200 00

*Files:*

New Files issued..General .....	4,864
“ “ “ ..Accounts chargeable .....	569
“ “ “ ..Accounts free .....	114

S. K. BURDIN,

Chief Clerk, Records Branch.

ALBERT GRIGG,

Deputy Minister.



## Appendix No. 13.

Statement showing the number of Locatees and of acres located; of purchasers and of acres sold; of lots resumed for non-performance of the settlement duties and of patents issued in Free Grant Townships during the year ending 31st October, 1920.

Township.	District or County.	Agent.	No. of persons located.	No. of acres located.	No. of purchasers.	No. of acres sold.	No. of persons cancelled.	No. of acres resumed.	No. of patents issued.	No. of acres patented.
Baxter .....	Muskoka. ....	J. B. Brown, Brace-	1	96	2	8	.....	.....	5	258½
Brunel .....	"	" bridge	.....	.....	.....	.....	.....	.....	1	100
Cardwell .....	"	"	1	82	.....	.....	1	82	.....	.....
Chaffey .....	"	"	2	199	.....	.....	2	199	1	100
Draper .....	"	"	.....	.....	.....	.....	.....	.....	.....	.....
Franklin .....	"	"	.....	.....	2	43½	.....	.....	3	311
Freeman .....	"	"	1	196	.....	.....	1	196	.....	.....
Macaulay .....	"	"	.....	.....	.....	.....	.....	.....	1	100
Medora .....	"	"	.....	.....	.....	.....	.....	.....	.....	.....
Monck .....	"	"	.....	.....	.....	.....	.....	.....	.....	.....
Morrison .....	"	"	2	256	.....	.....	1	95	1	191
Muskoka .....	"	"	.....	.....	1	5	1	53	1	5
McLean .....	"	"	4	500	.....	.....	4	380	4	572
Oakley .....	"	"	7	910½	.....	.....	7	852½	.....	.....
Ridout .....	"	"	.....	.....	.....	.....	.....	.....	1	200
Ryde .....	"	"	6	803	.....	.....	6	702	.....	.....
Sherborne .....	Haliburton ...	"	.....	.....	.....	.....	.....	.....	1	159
Sinclair .....	Muskoka .....	"	4	714	.....	.....	6	890	3	550
Stephenson .....	"	"	1	121	.....	.....	1	121	.....	.....
Stisted .....	"	"	.....	.....	.....	.....	.....	.....	3	396
Watt .....	"	"	.....	.....	.....	.....	.....	.....	.....	.....
Wood .....	"	"	1	115	4	6	2	232	6	378
Blair .....	Parry Sound..	Miss I. M. Campbell,	.....	.....	6	66½	.....	.....	4	39
Burpee .....	"	" Parry Sound	2	291	.....	.....	.....	.....	.....	.....
Carling .....	"	"	10	1,458	5	15¾	13	1,548	4	720
Christie .....	"	"	4	390	.....	.....	3	398	2	247
Conger .....	"	"	.....	.....	.....	.....	.....	.....	4	525
Cowper .....	"	"	.....	.....	.....	.....	1	9	5	30
Foley .....	"	"	1	100	.....	.....	1	100	1	20
Ferguson .....	"	"	4	700	.....	.....	.....	.....	.....	.....
Hagerman .....	"	"	.....	.....	.....	.....	.....	.....	.....	.....
Harrison .....	"	"	.....	.....	.....	.....	1	200	9	58
Henvey .....	"	"	4	595	.....	.....	2	400	.....	.....
Humphrey .....	"	"	1	190	.....	.....	.....	.....	1	140
McConkey .....	"	"	1	459	1	2	2	300	4	451
McDougall .....	"	"	2	292	2	5½	1	101	3	185½
McKellar .....	"	"	.....	.....	.....	.....	.....	.....	2	197
McKenzie .....	"	"	1	200	1	2	.....	.....	1	2
Monteith .....	"	"	9	1,348	4	108	2	307	2	396
Shawanaga .....	"	"	.....	.....	.....	.....	.....	.....	3	214
Wilson .....	"	"	2	333	4	66½	1	137	2	7
Chapman ....	Parry Sound .	Dr. J. S. Freeborn,	2	275	.....	.....	1	99	3	356
Croft .....	"	" Magnetawan	3	404	.....	.....	1	200	1	209
Ferrie .....	"	"	.....	.....	.....	.....	1	99	1	96
Gurd .....	"	"	3	373	1	1	3	400	1	1
Lount .....	"	"	3	449	.....	.....	3	399	3	600
Machar .....	"	"	3	398	.....	.....	5	596	1	176
Mills .....	"	"	2	400	2	14½	2	400	3	114
Pringle .....	"	"	1	100	.....	.....	.....	.....	1	100

## Appendix No. 13.—Continued.

Township.	District or County.	Agent.	No. of persons located.	No. of acres located.	No. of purchasers.	No. of acres sold.	No. of persons cancelled.	No. of acres resumed.	No. of patents issued.	No. of acres patented.
Ryerson .....	Parry Sound..	Dr. J. S. Freeborn, Magnetawan	3	300	...	...	2	200	...	...
Spence .....	"	"	3	600	1	50 $\frac{1}{2}$	3	500	...	...
Strong .....	"	"	1	100	1	42	3	212	...	...
Armour .....	Parry Sound..	David Thaw, Emsdale	3	303	3	216	5	574	3	303
Bethune .....	"	"	...	...	...	...	6	762	...	...
Joly .....	"	"	5	902	2	123	4	701	4	532
McMurrich...	"	"	3	500	1	88	4	500	4	384
Perry .....	"	"	...	...	...	...	...	...	...	...
Proudfoot....	"	"	1	100	...	...	2	291	2	200
Hardy .....	Parry Sound..	H. J. Ellis, Powassan.	1	100	1	11	1	200	1	11
Himsworth ..	"	"	5	901	1	100	3	412	3	500
Laurier .....	"	"	1	200	2	69	2	303	3	470
Nipissing....	"	"	1	100	...	...	1	184	2	300
Patterson....	"	"	2	396	...	...	1	194	4	660
Bonfield....	Nipissing ....	W. J. Parsons, North	13	1,395	2	29	7	640	11	1,190
Boulter .....	"	" Bay	7	1,005	...	...	1	100	...	...
Chisholm .....	"	"	3	508	1	6	1	105	5	737
Ferris .....	"	"	1	100	...	...	1	100	8	1,093
Anson .....	Haliburton ...	R. H. Baker, Minden..	...	...	...	...	...	...	...	...
Glamorgan ..	"	"	2	225	...	...	3	398	2	364
Hindon .....	"	"	...	...	...	...	...	...	...	...
Lutterworth..	"	"	1	35	...	...	2	122	4	400
Minden .....	"	"	...	...	...	...	...	...	1	100
Snowdon .....	"	"	...	...	...	...	...	...	1	100
Stanhope....	"	"	2	341 $\frac{1}{2}$	...	...	1	201	...	...
Anstruther...	Peterborough.	William Hales, Apsley	3	578	1	24	3	578	1	98
Burleigh, N.D.	"	"	4	391	...	...	2	198	...	...
" S.D.	"	"	1	175 $\frac{1}{2}$	...	...	...	...	...	...
Chandos .....	"	"	4	401	...	...	...	...	4	617
Methuen .....	"	"	...	...	...	...	...	...	...	...
Cardiff.....	Haliburton ...	A. N. Wilson, Kinmount	8	1,216	...	...	5	800	2	250
Cavendish....	Peterborough.	"	...	...	2	28	...	...	5	483
Galway .....	"	"	2	200	1	5	4	426	5	306
Monmouth ...	Haliburton ...	"	6	682	1	85	4	446	4	425
Bangor .....	Hastings .....	W. J. Douglas, May-	4	357	4	99	6	643	...	...
Carlow .....	"	"nooth	...	...	1	4	...	...	1	85
Cashel .....	"	"	...	...	...	...	...	...	...	...
Dungannon ..	"	"	5	637	1	11 $\frac{1}{2}$	2	304	3	291
Faraday .....	"	"	8	1,152	...	...	4	419 $\frac{1}{2}$	4	550
Herschel .....	"	"	8	1,048	1	1	5	815	8	1,008 $\frac{1}{2}$
Limerick .....	"	"	2	187	1	$\frac{1}{3}$	2	187	...	...
Mayo .....	"	"	1	91	...	...	...	...	1	194
Monteagle ...	"	"	3	225 $\frac{1}{2}$	4	165	1	50 $\frac{1}{2}$	8	1,286
McClure .....	"	"	1	101	...	...	...	...	2	201
Wicklow .....	"	"	1	101	...	...	1	101	1	50
Wollaston....	"	"	2	202	...	...	2	295	...	...
Algona, S. ...	Renfrew .....	Frank Blank, Wilno...	...	...	...	...	...	...	2	218
Brougham....	"	"	3	220	3	140	1	100	8	966
Brudenell....	"	"	4	441	1	200	1	200	2	228
Burns .....	"	"	1	100	...	...	3	400	...	...



## Appendix No. 13.—Continued.

Township.	District or County.	Agent.	No. of persons located.	No. of acres located.	No. of purchasers.	No. of acres sold.	No. of persons cancelled.	No. of acres resumed.	No. of patents issued.	No. of acres patented.
O'Connor.....	Thunder Bay.	J. A. Oliver, Port	.....	.....	.....	.....	1	162	3	476
Oliver.....	"	" Arthur	1	163	1	1	2	323	3	483½
Paipoonge, N R	"	"	.....	.....	.....	.....	.....	.....	1	100
" S R	"	"	.....	.....	.....	.....	.....	.....	1	193
Pardee.....	"	"	1	120	.....	.....	3	467	.....	.....
Pearson.....	"	"	3	480	.....	.....	4	639	3	502
Scoble.....	"	"	5	652	2	97½	7	1,050¾	1	159½
Stirling.....	"	"	34	4,866¼	18	1,214	26	4,090	1	158¾
Strange.....	"	"	2	314	1	138	2	314	4	629
Ware.....	"	"	4	640½	3	211½	9	1,484	14	1,389
Atwood.....	Rainy River..	William Cameron,	.....	.....	.....	.....	.....	.....	.....	.....
Blue.....	"	" Stratton	2	319	.....	.....	4	643	3	394
Curran.....	"	"	1	162	1	2	1	162	.....	.....
Dewart.....	"	"	11	1,519	1	1½	7	1,118	.....	.....
Dilke.....	"	"	1	162	1	1½	1	162	1	82
Morley.....	"	"	2	242	.....	.....	2	242	1	79½
Morson.....	"	"	6	773¾	3	113	8	1,177	2	334½
McCrosson...	"	"	1	111	1	80	3	447	2	315
Nelles.....	"	"	9	1,164½	.....	.....	5	562	3	241
Pattullo.....	"	"	2	201	3	7	1	162	2	163
Pratt.....	"	"	3	360½	1	80¼	3	459	.....	.....
Rosebery.....	"	"	.....	.....	.....	.....	.....	.....	.....	.....
Shenston.....	"	"	.....	.....	2	6	.....	.....	4	448
Sifton.....	"	"	5	717¾	2	114½	7	814¾	3	418½
Spohn.....	"	"	8	1,166¼	2	99	6	989½	3	572
Sutherland...	"	"	5	834½	1	160	8	1,308½	3	400½
Tait.....	"	"	2	244	.....	.....	5	628	5	644
Tovell.....	"	"	6	923½	1	2	6	1,016	2	234½
Worthington..	"	"	.....	.....	.....	.....	.....	.....	1	158
Aylsworth.....	Rainy River..	Alex. McFayden, Emo.	1	160	.....	.....	.....	.....	2	204½
Barwick.....	"	"	.....	.....	.....	.....	.....	.....	1	160
Burriss.....	"	"	.....	.....	.....	.....	.....	.....	2	237½
Carpenter.....	"	"	2	223	.....	.....	2	223	.....	.....
Crozier.....	"	"	1	40½	.....	.....	.....	.....	1	160
Dance.....	"	"	2	317½	.....	.....	3	478	1	160
Devlin.....	"	"	.....	.....	1	4	.....	.....	2	113½
Dobie.....	"	"	1	80¼	.....	.....	1	80¼	2	249½
Fleming.....	"	"	.....	.....	.....	.....	.....	.....	.....	.....
Kingsford.....	"	"	4	635½	.....	.....	4	635½	.....	.....
Lash.....	"	"	.....	.....	.....	.....	.....	.....	.....	.....
Mather.....	"	"	2	333	1	15½	3	490½	1	175½
Miscampbell..	"	"	2	319½	.....	.....	3	479	1	160½
Potts.....	"	"	2	319	.....	.....	3	670½	.....	.....
Richardson...	"	"	3	564½	.....	.....	.....	.....	.....	.....
Roddick.....	"	"	.....	.....	.....	.....	.....	.....	.....	.....
Woodyatt.....	"	"	.....	.....	.....	.....	.....	.....	1	147
Aubrey.....	Kenora.....	J. E. Gibson, Dryden..	8	1,109½	1	83	5	586¼	2	333
Britton.....	"	"	3	481	1	2½	1	162½	2	322
Eton.....	"	"	8	1,260	1	79¾	7	1,100½	3	400
Langton.....	"	"	3	477	2	91	3	461	.....	.....
Melgund.....	"	"	4	552	.....	.....	1	144	.....	.....
Mutrie.....	"	"	3	445½	.....	.....	2	239½	.....	.....
Redvers.....	"	"	3	437	.....	.....	.....	322½	.....	.....
Rowell.....	"	"	.....	.....	1	79	.....	.....	.....	.....
Rugby.....	"	"	1	160	.....	.....	1	160	.....	.....
Sanford.....	"	"	7	853¾	2	115	5	361	4	435
Southworth...	"	"	4	509½	1	20	4	333	.....	.....



## Appendix No. 13.—Continued.

Township.	District or County.	Agent.	No. of persons located.	No of acres located.	No. of purchasers.	No. of acres sold.	No. of persons cancelled.	No. of acres resumed.	No. of patents issued.	No. of acres patented.
Temple.....	Kenora .....	J. E. Gibson, Dryden..	4	715	...	...	5	847	1	80
Van Horne ...	"	"	2	315½	...	...	1	155½	1	160
Wabigoon ....	"	"	6	944½	...	...	4	591½	4	520
Wainwright ..	"	"	11	1,571½	2	107	6	946½	4	353
Zealand .....	"	"	17	2,300	11	661	11	1,660	7	115
Melick .....	Kenora .....	T. F. O'Flaherty,	9	1,436	1	161	4	617	2	160
Pellatt .....	"	" Kenora	3	251	1	110	4	699½	3	387
Balfour .....	Sudbury.....	J. K. MacLennan, Sud-	1	160	...	...	1	160	...	...
Blezard .....	"	" bury	2	155	...	...	...	...	2	199½
Broder .....	"	"	1	160	2	26	...	...	4	632
Capreol .....	"	"	2	315½	8	4	2	315½	...	...
Chapleau.....	"	"	...	...	1	67	...	...	1	67
Dill .....	"	"	2	239¾	...	...	3	479½	2	200
Garson .....	"	"	...	...	...	...	1	163	...	...
Hanmer .....	"	"	3	423½	...	...	5	758	...	...
Lumsden .....	"	"	1	80½	...	...	1	161½	...	...
Morgan .....	"	"	1	157	...	...	1	157	...	...
Neelon .....	"	"	...	...	1	15	...	...	2	175
Rayside .....	"	"	...	...	...	...	...	...	...	...
Appelby .....	Sudbury .....	John Brown, Markstay	8	1,275	1	1	1	161	1	161
Casimir .....	"	"	5	701	...	...	1	143½	1	160
Dunnet .....	"	"	...	...	...	...	...	...	1	159
Hagar .....	"	"	13	2,064½	3	259½	6	1,003	...	...
Jennings .....	"	"	1	101½	2	3	...	...	...	...
Kirkpatrick ..	"	"	1	160	3	239½	...	...	2	322
Ratter .....	"	"	7	1,104½	2	9	2	320	1	164
Caldwell .....	Nipissing ....	J. A. Philion, Sturgeon	2	320	2	103½	...	...	3	258
Cosby .....	"	" Falls	2	314½	...	...	...	...	...	...
Grant .....	"	"	1	160½	...	...	...	...	1	101
Macpherson ..	"	"	2	304½	...	...	...	...	3	440
Martland .....	"	"	6	679¼	...	...	1	161	2	230
Springer .....	"	"	3	586	...	...	...	...	2	66
Abinger .....	Lennox and	Charles Both, Denbigh	2	207	...	...	1	107	...	...
Canonto, S....	Addington	"	1	97	...	...	...	...	...	...
" N....	Frontenac....	"	...	...	...	...	...	...	...	...
Clarendon ..	"	"	1	87	...	...	1	50	...	...
Denbigh ..	Lennox and	"	4	388	...	...	3	298	2	257
Miller (pt.) ..	Addington	"	...	...	...	...	...	...	1	200
Palmerston ..	Frontenac....	"	...	...	...	...	...	...	...	...
McClintock ...	Haliburton....	Unattached .....	...	...	...	...	...	...	...	...
Airy .....	Nipissing .....	"	5	490	1	107½	2	199	1	205
Finlayson .....	"	"	...	...	7	129½	...	...	7	129
Murchison .....	"	"	2	300	1	63	...	...	1	86
Sabine .....	"	"	6	779	...	...	...	...	1	99
O'Brien .....	Temi kaming.	"	7	547½	1	1½	1	1½	1	1½
Owens .....	"	"	1	101	...	...	...	...	...	...
Williamson...	"	"	1	70	...	...	...	...	...	...
			654	88,813¾	196	7,530½	516	71382 7/10	458	53295 9/10

No. of lots assigned ..... 272

No. of acres assigned ..... 34,890

By Special Regulations under Order-in-Council, dated 7th February, 1919, Returned Soldiers were permitted to acquire free grant locations or have their arrears due the Crown in respect of land for settlement purposes remitted, and the following list comprises the extent of such transactions:—

## IN SALE TERRITORY.

District.	Agency.	Number Locations	No arrears remitted.	Total
Algoma	Thessalon	3	..	
"	Sault Ste Marie	1	..	
"	Hearst	31	3	
Nipissing	North Bay	4	1	
"	Markstoy	1	..	
Sudbury	Espanola	2	..	
"	Massey	2	..	
Tim'skaming	Haileybury	..	..	
"	New Liskeard	3	4	
"	Elk Lake	1	..	
"	Englehart	9	6	
"	Matheson	13	12	
"	Cochrane	62	13	
"	Unattached	1	..	
		133	39	172

## IN FREE GRANT TERRITORY.

Parry Sound	Magnetawan	1	..	
"	Parry Sound	1	..	
Rainy River	Stratton	2	..	
Algoma	Espanola	1	..	
Sudbury	Markstoy	1	..	
Muskoka	Bracebridge	1	..	
		7	..	

*Appendix No. 13.—Concluded.*

## ISLANDS SOLD

Township	District or County	Agent	No. of Acres sold
Georgian Bay: Parcel 9, Island 30a .....	Parry Sound .....	Miss I. M. Campbell ....	12
Parcel D 26 .....	“ .....	“ .....	68/100
“ 2B, Island 30 .....	“ .....	“ .....	4½
“ B 278 .....	“ .....	“ .....	4.3/10
Island 358a .....	“ .....	“ .....	3/10
“ 75a .....	“ .....	“ .....	12/100
“ B503 .....	“ .....	“ .....	1.1/10
“ B477 .....	“ .....	“ .....	41½
			64½

SELBY DRAPER, Free Grants Clerk.  
W. C. CAIN, Chief Clerk.

ALBERT GRIGG,  
Deputy Minister of Lands and Forests.

## Appendix No. 14.

Statement showing the number of purchasers and of acres sold; of lots resumed for non-performance of the settlement duties; and of patents issued in Townships other than Free Grant during the year ending 31st October, 1920.

Township.	District or County.	Agent.	No. of acres sold.	No. of pur- chasers.	No. of sales cancelled.	No. of acres resumed.	No. of patents issued.	No. of acres patented.
Blount .....	Temiskaming.	S. J. Dempsay, Cochrane	158½	2	7	906½	.....	.....
Brower .....	"	"	642½	4	5	776	2	324½
Calder .....	"	"	150	1	.....	.....	3	424
Clute .....	"	"	1,161	8	5	680	7	1,072
Colquhoun .....	"	"	147	1	.....	.....	.....	.....
Fauquier .....	"	"	2,009	14	3	482	2	406
Fournier .....	"	"	192½	2	1	156	3	464½
Fox .....	"	"	2,558½	16	5	799½	.....	.....
Glackmeyer .....	"	"	765	6	4	443	6	853½
Kennedy .....	"	"	150	1	3	450	.....	.....
Lamarche .....	"	"	321½	3	1	160	2	324½
Leitch .....	"	"	901	6	5	748	.....	.....
Newmarket .....	"	"	1,577½	11	3	485½	.....	.....
Pyne .....	"	"	1,445½	9	.....	.....	.....	.....
Shackleton .....	"	"	150	1	.....	.....	3	389
Bayley .....	Temiskaming.	Jos. Woollings, Englehart	158½	1	.....	.....	1	80
Catharine .....	"	"	160	1	.....	.....	8	618
Chamberlain .....	"	"	156½	1	.....	.....	6	897
Dack .....	"	"	161½	1	.....	.....	4	560
Davidson .....	"	"	320	1	.....	.....	.....	.....
Eby .....	"	"	.....	.....	.....	.....	1	37
Evanturel .....	"	"	321½	2	.....	.....	6	953
Gross .....	"	"	.....	.....	.....	.....	.....	.....
Ingram .....	"	"	.....	.....	2	319	4	631
Marter .....	"	"	480	3	2	310½	2	320
Marquis .....	"	"	788½	5	1	161½	.....	.....
Otto .....	"	"	161½	1	.....	.....	.....	.....
Pacaud .....	"	"	.....	.....	4	638½	6	240
Pense .....	"	"	334	3	2	332	.....	.....
Robillard .....	"	"	161½	1	2	314½	4	610
Savard .....	"	"	322	2	.....	.....	2	320
Sharpe .....	"	"	.....	.....	.....	.....	2	266
Truax .....	"	"	159½	1	1	153½	.....	.....
Armstrong .....	Temiskaming.	J. W. Bolger, New Lis-	160½	2	.....	.....	7	1,069
Auld .....	"	" " " keard	160	1	.....	.....	.....	.....
Beauchamp .....	"	"	1,121	7	5	803½	5	965½
Brethour .....	"	"	160	1	1	158½	6	840
Bryce .....	"	"	319	2	3	478	1	160
Bucke .....	"	"	.....	.....	.....	.....	6	715
Cane .....	"	"	582	4	4	643	4	483
Casey .....	"	"	73	2	.....	.....	6	749
Dymond .....	"	"	.....	.....	.....	.....	4	484
Firstbrook .....	"	"	333	3	.....	.....	7	554
Harley .....	"	"	160	1	.....	.....	9	930
Harris .....	"	"	.....	.....	.....	.....	5	625½
Henwood .....	"	"	641½	4	4	642	4	591½
Hilliard .....	"	"	157	1	.....	.....	6	957
Hudson .....	"	"	400½	3	3	450	4	560½
Kerns .....	"	"	.....	.....	.....	.....	9	1,380½
Lundy .....	"	"	.....	.....	.....	.....	.....	.....
Tudhope .....	"	"	158½	1	2	318½	6	577½
Smyth .....	Temiskaming.	Mark Morgan, Elk Lake	441½	3	.....	.....	1	39½



## Appendix No. 14.—Continued.

Township.	District or County.	Agent.	No. of acres sold.	No. of pur- chasers.	No. of sales cancelled.	No. of acres resumed.	No. of patents issued.	No. of acres patented.
Lorrain .....	Temiskaming	Neil J. McAulay, Hailey- bury	319	2	.....		4	430
Beatty .....	Temiskaming.	F. E. Ginn, Matheson ..	130	1	.....		4	650
Benoit .....	"	"	1,109½	7	4	649½	6	355
Bond .....	"	"	314	2	.....			
Bowman .....	"	"	312	2	.....		3	495
Calvert .....	"	"	161	1	4	636		
Carr .....	"	"	430	3	.....		6	790
Clergue .....	"	"	320	2	.....			
Currie .....	"	"	321½	2	4	645		
Dundonald .....	"	"	719½	5	4	623		
Evelyn .....	"	"	159	1	1	159		
German .....	"	"	2,189½	15	9	1,370		
Hislop .....	"	"	161	1	.....			
Matheson .....	"	"	321	2	2	313½	1	151
Mountjoy .....	"	"	597	4	4	641½		
McCart .....	"	"	1,087½	7	3	481	1	158½
Playfair .....	"	"	389	3	.....		3	539
Stock .....	"	"	331	2	2	328½		
Taylor .....	"	"	302	2	1	151	4	641½
Walker .....	"	"	160	1	.....			
Casgrain .....	Algoma .....	T. V. Anderson, Hearst.	3,238	22	15	2,240	3	414
Eilber .....	"	"	600	4	.....			
Hanlan .....	"	"	2,691	20	4	574		
Kendall .....	"	"	2,721½	21	5	750	9	1,155
Lowther .....	"	"	1,454	10	.....			
Forbes .....	Thunder Bay.	J. A. Oliver, Port Arthur	598	4	5	682	1	7
Lyon .....	"	"	266½	2	.....		2	267
Nepigon .....	"	"	320	2	1	137½	6	919
Aweres .....	Algoma .....	T. Dean, Sault Ste. Marie	171	1	1	173		
Tarentorus ..	"	"	.....	.....	.....			
Vankoughnet ..	"	"	310	2	.....			
Watten .....	Rainy River..	C. J. Hollands, Fort Frances	.....	.....	.....		1	79½
Bright .....	Algoma .....	Thos. Dodds, Thessalon.	.....	.....	2	320	2	303
Bright Ad .....	"	"	.....	.....	3	644		
Day .....	"	"	.....	.....	.....			
Gladstone .....	"	"	.....	.....	.....			
Gould .....	"	"	476	3	.....		2	184½
Haughton .....	"	"	.....	.....	.....			
Johnson .....	"	"	240	2	.....		5	720
Kirkwood .....	"	"	.....	.....	.....			
Parkinson .....	"	"	.....	.....	.....			
Patton .....	"	"	.....	.....	.....			
Rose .....	"	"	.....	.....	.....		1	154
Striker .....	"	"	.....	.....	.....			
Thompson .....	"	"	.....	.....	10	1,504	2	298
Wells .....	"	"	152	1	.....			
Drayton .....	Kenora .....	T. F. O'Flaherty, Kenora	186½	3	.....		2	41½
Hallam .....	Sudbury .....	R. W. Teasdale, Massey	447	3	.....			
Harrow .....	"	"	164½	2	.....		2	300½
May .....	"	"	288	2	.....		1	135
Salter .....	"	"	156	1	.....			

## Appendix No. 14.—Continued.

Township.	District or County.	Agent.	No. of acres sold.	No. of pur- chasers.	No. of sales cancelled.	No. of acres resumed.	No. of patents issued.	No. of acres patented.
Shedden .....	Sudbury .....	R. W. Teasdale, Massey	30	1				
Victoria .....	"	"	145	1			1	160
Dowling .....	Sudbury .....	J. K. MacLennan, Sud- bury	160	1			1	460½
Scollard .....	Nipissing ....	J. A. Philion, Sturgeon	333½	3				
Mason .....	"	" " Falls	313½	2			3	480
Hugel .....	Nipissing ....	John Brown, Markstay.	764½	5			2	320
Widdifield ....	Nipissing ....	W. J. Parsons, North Bay	1,052	9	2	319½	9	1,276
Nairn .....	Sudbury .....	Edward Arthurs, Espanola						
Admaston ....	Renfrew .....	Unattached .....	100	1			5	600
Bagot .....	"	"	285	3	1	100	2	200
Blithfield ....	"	"	163	2			1	2
Bromley .....	"	"	100	1			1	160
Horton .....	"	"	100	1				
McNabb .....	"	"					1	80
Westmeath ...	"	"	233	2			1	153
Elizabethtown.	Leeds .....	Unattached .....					1	49½
Effingham ....	Lennox .....	Unattached .....						
Kaladar .....	"	"						
Sheffield .....	"	"	200	2				
Artemesia ....	Grey .....	Unattached .....					1	50
Bentinck ....	"	"					2	200
Derby .....	"	"					1	50
Egremont .....	"	"					3	351
Glenelg .....	"	"					1	100
Holland .....	"	"					3	317½
Normanby ....	"	"	50	1			2	150
Osprey .....	"	"						
Proton .....	"	"					1	149½
Sullivan .....	"	"					3	250
Arran .....	Bruce .....	Unattached .....					1	99
Brant .....	"	"						
Bruce .....	"	"					1	955
Elderslie .....	"	"					1	49½
Huron .....	"	"					1	50
Kincardine ...	"	"					1	72
Ameliasburgh.	Prince Edward	Unattached .....	100	1			1	99
Barrie .....	Frontenac ...	Unattached .....					1	154
Olden .....	"	"						
Hinchinbrooke.	"	"	200	1				
Kennebec .....	"	"					3	600
Oso .....	"	"	199	1			5	936
Beckwith .....	Lanark .....	Unattached .....						
Dalhousie ....	"	"	100	1			1	100
Darling .....	"	"						
Pakenham ....	"	"					2	400
Lanark .....	"	"					1	100
Sherbrooke, N.	"	"	290	1			2	498

## Appendix No. 14.—Continued.

Township.	District or County.	Agent.	No. of acres sold.	No. of pur- chasers.	No. of sales cancelled.	No. of acres resumed.	No. of patents issued.	No. of acres patented.
Melancthon ...	Dufferin .....	Unattached .....					1	100
Gosfield, S. ...	Essex .....	Unattached .....	86	1			1	86
Sandwich, E. ...	" .....	" .....						
Haughton .....	Norfolk .....	Unattached .....						
Percy .....	Northumber- land .....	Unattached .....					1	49½
Rama .....	Ontario .....	Unattached .....	100	1			1	100
Carden .....	Victoria .....	Unattached .....					1	164
Dalton .....	" .....	" .....					3	251
Laxton .....	" .....	" .....						
Somerville .....	" .....	" .....	332	3			2	209
Edwardsburgh	Grenville ...	Unattached .....						
Belmont .....	Peterborough.	Unattached .....					1	100
Dummer .....	" .....	" .....	200	2			2	200
Harvey .....	" .....	" .....	268	2			2	185
Smith .....	" .....	" .....						
Nassagaweya .	Halton .....	Unattached .....					1	100
Elzevir .....	Hastings .....	Unattached .....						
Grimsthorpe ..	" .....	" .....						
Hungerford ...	" .....	" .....	100	1			1	100
Tudor .....	" .....	" .....	358	3			4	408
Thurlow .....	" .....	" .....	100	1			1	100
Ashby .....	Lennox and	Unattached .....	100	1			1	100
Denbigh .....	Addington	" .....					1	257
Sheffield .....	" .....	" .....	100	1				
Cornwall .....	Stormont....	Unattached .....						
Roxborough...	" .....	" .....	336	4			3	291
Gwillimbury,	Simcoe .....	Unattached .....	200	1				
W. Matchedash...	" .....	" .....	35	3			5	45
Tiny .....	" .....	" .....	11	1				
Arthur .....	Wellington...	Unattached .....						
Luther West ..	" .....	" .....					1	100½
Barton .....	Wentworth ..	Unattached .....						
Saltfleet .....	" .....	" .....	¾	2				
Cody .....	Temiskaming.	" .....	160	1				
Maisonville ...	" .....	" .....					20	661
Bigwood .....	Sudbury .....	Unattached .....						
Burwash .....	" .....	" .....	160½	1				
Creighton .....	" .....	" .....					10	600
Dennison .....	" .....	" .....					2	117¼
Drury .....	" .....	" .....	319	2			1	160
Dryden .....	" .....	" .....	319	2			2	320
Falconbridge .	" .....	" .....						
Foleyet .....	" .....	" .....	406½	1				

## Appendix No. 14.—Continued.

Township.	District or County	Agent.	No. of acres sold.	No. of pur- chasers.	No. of sales cancelled.	No. of acres resumed.	No. of patents issued.	No. of acres patented.
Lorne .....	Sudbury .....	Unattached .....	4	1				
Louise .....	"	"	245	2			6	1,341
McKinnon .....	"	"						
MacLennan .....	"	"						
Shakespeare .....	"	"	161	1			1	159½
Snider .....	"	"						
Waters .....	"	"	347	2			1	177
Badgerow ....	Nipissing ....	Unattached .....	258	1	3	462	3	473
Crerar .....	"	"	866	6				
Delamere .....	"	"						
Falconer .....	"	"	9	1				
Field .....	"	"	414	3			1	468½
Gibbons .....	"	"						
Jaffray .....	Kenora .....	Unattached .....					1	40
Malachi .....	"	"					2	27
Umbach .....	"	"						
McTavish .....	Thunder Bay.	Unattached .....						
Loughrin ....	Sudbury .....	Unattached .....	311½	2				
McKim .....	"	"	178½	1				
Long .....	Algoma .....	Unattached .....	160	1			1	160
O'Brien .....	"	"	1½	1				
Townsites—								
Armstrong ....	Thunder Bay.	Unattached .....						
Grant .....	"	"	2	2				
MacFarlane ....	Kenora .....	"	1½	5				
Dryden .....	"	"					1	1½
Sioux Look- out .....	"	"						
Waldhof .....	"	"	3½	2				
Winnipeg River Crossing ....	"	"	1	1			1	1½
Hearst .....	Algoma .....	T. V. Anderson, Hearst.	9½	23				
Hilton .....	"	W. E. Whybourne, Marksville	5	6			6	3½
Capreol .....	Sudbury ....	Unattached .....	3½	12				
Frederickhouse	"	Unattached .....	1	2				
Iroquois Falls.	"	"						
Kirkland Lake	"	"	3½	3				
Larder Lake ..	"	"	1½	1				
Smyth .....	"	"	1½	1				1
Gowganda ....	"	"			40	12		
Petewawa ....	Renfrew .....	Unattached .....					1	½
Penetanguishene	Simcoe .....	Unattached .....					1	11
Alma .....	Wellington...	Unattached .....					2	3½



## Appendix No. 14.—Concluded.

Cities and Towns.	District or County.	Agent.	No. of acres sold.	No. of purchasers.	No. of sales cancelled.	No. of acres resumed.	No. of patents issued.	No. of acres patented.
WATER LOT								
Ford City....	Essex .....	Unattached.....	$\frac{1}{4}$	1	.....		1	$\frac{1}{4}$
Fort William..	Thunder Bay.	" .....	$\frac{1}{50}$	1	.....		1	$\frac{1}{50}$
Port Arthur...	" "	" .....	12	1	.....			
Missanabie ...	Algoma.....	" .....	$\frac{4}{5}$	1	.....			
City of Toronto	York.....	" .....	$6\frac{1}{2}$	2	.....		2	$6\frac{1}{2}$
Ashbridge's... Bay	" .....	" .....						
ISLANDS.								
A 49 .....	Algoma.....	Unattached.....	2	1	.....			
27.....	St. Joseph Channel...	" .....	1	1	.....		1	1
Parcel Islands	St. Joseph Channel...	" .....	$9\frac{3}{4}$	1	.....			
J. D. 54.....	St. Joseph Channel...	" .....	10	1	.....			
Island 17, Bedford Island..	St. Joseph Channel...	" .....	25	1	.....			
Part Cedar Island .....	St. Joseph Channel...	" .....	11	1	.....			
N. E. pt. J. D. Island.....	St. Joseph Channel...	" .....	145	1	.....			
C. R. 1 Island.	St. Joseph Channel...	" .....						
Louden—								
Crow Lake Island .....	Nipissing ....	" .....	$2\frac{2}{10}$	1	.....		1	$2\frac{2}{10}$
Abitibi Lake Island....	" .....	" .....	5.2	1	.....		1	5.2
Burgess N—								
Arrow Is'd..	Lanark .....	" .....	$2\frac{1}{10}$	1	.....		1	$2\frac{1}{10}$
Bedford—								
Pt. Whitefish Island.....	Frontenac....	" .....	$\frac{21}{100}$	1	.....		1	$\frac{21}{100}$
Bedford—								
Pt. Whitefish Island....	" .....	" .....	$\frac{1}{4}$	1	.....		1	$\frac{1}{4}$
Crosby N. Is'd	Leeds .....	" .....	$5\frac{1}{2}$	1	.....		1	$5\frac{1}{2}$
Covey's Island	Rear of Leeds and Lansdowne....	" .....	$4\frac{1}{2}$	1	.....			$4\frac{1}{2}$
Union Island..	Lansdowne...	" .....	$5\frac{1}{2}$	1	.....		1	$5\frac{1}{2}$
Ashby—								
Weslemkoon Lake Is'd. ....	" .....	" .....	$\frac{3}{4}$	2	.....		2	$\frac{3}{4}$
Total .....			$57,032\frac{3}{20}$	491	208	$25,725\frac{1}{2}$	425	$47,977\frac{11}{200}$

Number of lots assigned.....375

Number of acres assigned..... 53,609

W. R. LEDGER, Sales Clerk.

W. C. CAIN, Chief Clerk.

ALBERT GRIGG,

Deputy Minister of Lands and Forests.

*Appendix No. 15.*

## REPORT ON CROWN LAND SURVEYS.

SIR,—Acting under instructions given during the past year twenty Ontario Land Surveyors with accompanying parties were engaged on field work throughout the northern part of the Province. The extent and nature of these surveys may be briefly described as follows:

## EXPLORATORY WORK.

A meridian line extending north from the westerly end of Lac Seul for one hundred miles into the District of Patricia and a base line forty miles west therefrom were surveyed by K. G. Ross, O.L.S. Similar work to the same extent north of Lake St. Joseph was performed by J. S. Dobie, O.L.S., last year. The reports and returns of this work may be considered to give in a general way the character of the country in the District of Patricia south of latitude fifty-two degrees north.

The western limit of the Nipigon Forest Reserve in the District of Thunder Bay was established on the ground by Phillips & Benner, O.L.S., and this meridian was extended north to White Water Lake on the Ogoki River waters. Latitude fifty degrees forty-five minutes north, longitude eighty-nine degrees ten minutes west. This vast forest reserve comprising seven thousand square miles surrounding Lake Nipigon has now been defined on the ground with the exception of the north limit and this will enable the Department to deal with timber and mining lands in that district and the lines will form a base from which other exploratory work can be carried on.

## TOWNSHIP BOUNDARIES, NINE MILE SYSTEM.

Outlines of twelve, nine mile townships in the Districts of Timiskaming and Algoma on the Ground Hog and Kapuskasing River watersheds were surveyed by Sutcliffe & Neelands, O.L.S., and N. B. MacRostie, O.L.S. This work completes the blocking of the territory lying between the two lines of the Canadian National Railway in the District of Timiskaming. The reports on this work indicate a large area of good clay land but requiring extensive drainage to make suitable for agriculture. The territory covered is well timbered with spruce, poplar, birch and balsam.

## TOWNSHIP BOUNDARIES, SIX MILE SYSTEM.

A large unexplored area in the District of Sudbury lying north of the Canadian Pacific Railway between Ramsay and Dalton Stations was blocked out in six mile townships, this work being assigned to Ontario Land Surveyors H. J. Beatty, J. W. Fitzgerald, C. V. Gallagher, McAuslan & Anderson, Speight & Van Nostrand, and A. C. Young. This area is not suitable for agriculture and may be described as a boulder country with sand clay and muskeg, rough and hilly, timbered with second growth spruce, banksian pine, birch, balsam and poplar.

Another area comprising six townships in the vicinity of White Lake and Shabotik River north of the Canadian Pacific Railway and immediately west of the district line between Thunder Bay and Algoma, was blocked out by M. E. Crouch, O.L.S. This area is well timbered with banksian pine and is unsuitable for agriculture.

## LAKE AND RIVER TRAVERSE SURVEYS.

The work was continued this year by C. R. Kenny, O.L.S., on the Missinaibi Lake and River; T. G. Code, O.L.S., on the Ground Hog River and headwater lakes; Bingham & Kirkup, O.L.S., on the Nagagami Lake and River and Pagwachuan River in the District of Algoma; T. J. Patten, O.L.S., on Lake Penage and Whitefish River; J. S. Dobie, O.L.S., on Lake St. Joseph, Island Lake and Kashawegama Lake.

The report of the geologist with Ontario Land Surveyor Dobie's party last year indicated the possibility of iron ore deposits in territory adjacent to Kashawegama Lake and Lake St. Joseph and it seemed advisable that a more detailed survey should be made in this area.

The beautiful expanse of Lake Penage and islands therein, its accessibility to steamboat and railroad traffic, though sufficiently removed for quiet, makes this district very attractive as a summer resort proposition.

The larger rivers flowing north to James Bay are being accurately mapped and the water power and timber prospects reported on and filed for future reference.

## MISCELLANEOUS SURVEYS.

Timber lines as required were surveyed by Lincoln Mooney, O.L.S. These consisted of work in the Township of Noble, in the District of Sudbury, Township D in the District of Algoma and Timber Berth E in the District of Nipissing. Wherever practicable these lines were marked permanently and will be used in further subdivisions of the townships when required.

## TOWNSITE.

The survey of a small townsite at Gogama in the Township of Noble, District of Sudbury, was assigned to Lincoln Mooney, O.L.S. This subdivision adjoining the Canadian National Railway line was required to take care of the locating and housing of the population in that lumber manufacturing area.

Instructions were issued to G. F. Summers, O.L.S., to survey a townsite at Kapuskasing on the Canadian National Railway, Township of O'Brien, District of Timiskaming. Owing to the location of the Spruce Falls Pulp Company's plant the townsite survey has been delayed but a definite location for the town has now been decided upon and work is progressing upon the subdivision.

W. H. Fairchild, O.L.S., was directed to mark certain boundaries of Crown lands and lay out park lots on the Lake Erie front at Long Point, Township of Walsingham. The method of dealing with this area and manner in which it should be controlled may now be intelligently considered.

E. T. Ireson, O.L.S., was instructed to proceed with the Canadian Aero Film Company's seaplane to James Bay and to cruise the territory south and west thereof and report as fully as possible from observation the character of the country covered. The conditions under which these instructions were carried out and the difficulties met with are fully described in his report herewith. (See Appendix 40.)

The stone monument planted to mark the interprovincial boundary at Port Fortune on the bank of the Ottawa River was found to be out of place and arrangements were made with the Department of Lands and Forests, Quebec, to

have this monument replaced. In accordance therewith J. Hutcheon, O.L.S., Inspector of Surveys for Ontario, and D. W. Mills, O.L.S., Inspector of Surveys for Quebec, proceeded to that point and had the monument repaired and replaced in its original position and otherwise referenced to preserve this point on the boundary permanently. The joint report on this matter is not yet completed but will appear next year.

C. E. Fitton, O.L.S., was engaged as Inspector of the field work of the several outline parties and as far as possible examined a part of the work in charge of each surveyor. His reports show that in most cases the work was satisfactorily performed and well up to the standard set in the instructions.

The plans, field notes and accounts when forwarded to the Department were duly examined and checked by the Inspector of Surveys.

A standard iron post similar to that used on Dominion land survey work has been adopted and was used at three mile points on all base and meridian and outline surveys made this year. The post consists of one inch iron pipe thirty inches long filled with cement with foot plate of pressed steel three and one-half inches in diameter and cap of bronze three inches in diameter. A hole is dug and the post is sunk so that the cap is flush with the surface. The ground is properly tamped around the post to make the position firm. The cap bears the inscription in the form of a circle "Ontario Crown Land Surveys," also "Seven years imprisonment for removal." In the centre of the circle is marked the mileage from township corners or from the initial point of starting in case of meridian and base lines. The posts are referenced to mounds, pits and bearing trees. This method of marking boundaries will tend to create a permanency not heretofore acquired. The same post is also being used to mark boundaries established by Municipal Surveys under the authority as set out in sections 15, 16, and 17 of the Survey Act. The inscription on the cap of the post being "Ontario Municipal Surveys."

The detailed reports of the several surveys performed which have been filed during the year will be found in Appendices 15 to 40, inclusive.

L. V. RORKE,  
*Director of Surveys.*

Toronto, October 31st, 1920.

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*Appendix 15-a.*

Statement of Municipal Surveys confirmed during the twelve months ending  
October 31st, 1920.

No.	Name of Surveyor.	No.	Date of Instructions.	Description of Survey.	Date when confirmed under R. S. O. 1914, Chapter 166, Secs. 10-15, inclusive.
1	C. A. Jones	709	Nov. 2, 1916.	To survey the boundary line between the Townships of Greenock and Culross, in the County of Bruce, and to plant stone or other durable monuments to mark the said boundary .....	July 24, 1920.
2	Oliver Smith	712	July 24, 1917.	To survey the concession line between concessions 9 and 10, opposite lot 17, Township of Cartwright .....	Mar. 23, 1918.
3	Roger M. Lee	719	Oct. 22, 1918.	To survey the original road allowance between lots 13 and 14, in the first concession of the said Township of Wainfleet, in the County of Welland, and that stone or other monuments be planted to mark the position of said road allowance at the intersection with the road allowance between the 1st and 2nd concessions, and at different points to the lake shore..	Jan. 12, 1920.

L. V. RORKE,  
Director of Surveys.

ALBERT GRIGG,  
Deputy Minister Lands and Forests.

*Appendix No. 16.*

Statement of Municipal Surveys for which instructions issued during the twelve months ending October 31st, 1920.

No.	Name of Surveyor.	No.	Date of Instructions.	Description of Survey.
1	Jas. J. McKay.	723	April 9, 1920.	To survey the original road allowance between the 2nd and 3rd concessions of the Township of Beverly, extending from the westerly side of lot No. 31 to the easterly side of lot No. 36, and to plant stone or other durable monuments to mark the said road allowance.
2	Edward J. Rainboth ..	724	Aug. 17, 1920.	To survey the concession road allowance between the 4th and 5th concessions, Ottawa front, lying between the westerly side of the side road between lots 5 and 6 and the easterly side of the side road between lots 15 and 16 on said concession road allowance, in the Township of Gloucester, and that stone or other durable monuments be placed to mark the boundary of the said road allowance.
3	Alexander Baird .....	725	Aug. 17, 1920.	To survey the side road known as the twentieth side line and also of the side road allowance between lots 25 and 26, from concessions 6 to 8, in the Township of North Easthope.

L. V. RORKE,  
Director of Surveys.

ALBERT GRIGG,  
Deputy Minister Lands and Forests.

*Appendix No. 17.*

Statement of Surveys in progress during the twelve months ending October 31st, 1920.

No.	Date of Instructions.	Name of Surveyor.	Description of Survey.	Amount Paid
1	June 30, 1919.	A. L. Russell...	To traverse the shores of Upper Shebandowan and Green Water Lakes, District of Thunder Bay.	\$ c. 600 00
2	May 12, 1920.	H. J. Beatty....	To survey certain township outlines, District of Sudbury .....	5,650 00
3	May 5, 1920.	Bingham & Kirkup .....	To traverse certain lakes and rivers, District of Algoma .....	4,000 00
4	May 4, 1920.	T. G. Code .....	To continue traverse certain lakes and rivers, Districts of Sudbury and Timiskaming.....	4,125 00
5	May 12, 1920.	M. E. Crouch ..	To survey certain township outlines north of C. P. Railway, District of Thunder Bay .....	5,150 00
6	Feb. 28, 1920.	J. S. Dobie.....	To survey Kashaweogama Lake and Island Lake, District of Thunder Bay .....	3,100 00
7	May 15, 1920.	J. S. Dobie ....	To traverse the shores of Lake St. Joseph and run certain base and meridian lines in the District of Patricia .....	7,190 00
8	Jan. 14, 1920.	W. H. Fairchild.	To survey Sand Beach into park lots between Long Point and Walsingham .....	200 00
9	May 21, 1920.	J. W. Fitzgerald.	To survey certain township outlines north of C. P. Railway, District of Sudbury .....	5,700 00
10	May 11, 1920.	C. V. Gallagher.	To survey certain township outlines north of C. P. Railway, District of Sudbury .....	1,500 00
11	May 4, 1920.	C. R. Kenny....	To continue traverse of Missinaibi Lake and River, Districts of Algoma and Sudbury .....	4,000 00
12	May 17, 1920.	K. G. Ross.....	To survey a meridian and base lines in the District of Patricia..	12,600 00
13	May 12, 1920.	N. B. MacRostie.	To survey certain township outlines, District of Timiskaming..	4,500 00
14	May 11, 1920.	McAuslan & Anderson ...	To survey certain Township outlines north of C. P. Railway, District of Sudbury .....	3,900 00
15	May 18, 1920.	Phillips & Benner .....	To survey meridian line forming the west boundary of the Nipigon Forest Reserve, District of Thunder Bay .....	6,800 00
16	May 4, 1920.	T. J. Patten ...	To traverse Lake Penage Islands and other lakes and outlets in the District of Sudbury .....	1,700 00

*Appendix No. 17.*

Statement of Surveys in progress during the twelve months ending October 31st, 1920.

No.	Date of Instructions.	Name of Surveyor.	Description of Survey.	Amount Paid.
17	May 21, 1920.	Speight & Van Nostrand	To survey certain township outlines north of C. P. Railway, District of Sudbury .....	\$ c. 5,900 00
18	Aug. 24, 1920.	Sutcliffe & Neelands ....	To traverse part of the Montreal River, District of Timiskaming..	400 00
19	May 27, 1920.	G. F. Summers.	To survey a town plot and other lands in the vicinity of Kapuskasing, Township of O'Brien, District of Timiskaming .....	500 00
20	May 12, 1920.	A. C. Young ...	To survey certain township outlines north of C. P. Railway, District of Sudbury .....	5,550 00
21	May 14, 1920.	C. E. Fitton....	Inspection of surveys for 1920....	2,600 00
				85,765 00

L. V. RORKE,  
Director of Surveys.

ALBERT GRIGG,  
Deputy Minister Lands and Forests.



*Appendix No. 18.*

Statement of Crown Surveys completed and closed during the twelve months ending  
October 31st, 1920.

No.	Date of Instructions.	Name of Surveyor.	Description of Survey.	Amount Paid
1	May 16, 1919. July 8, 1919.	E. R. Bingham.	Subdivision of part of the Township of Devon and Hartington, and survey of base and meridian lines, District of Thunder Bay..	\$ c. 3,719 35
2	April 30, 1919.	David Beatty ..	Traverse certain lakes in the Timi-gami Forest Reserve, Districts of Nipissing and Sudbury .....	2,865 60
3	April 15, 1919.	H. J. Beatty...	Survey certain township outlines north of Lake Abitibi, District of Timiskaming .....	2,491 91
4	April 15, 1919.	A. S. Code.....	Survey certain township outlines in the District of Algoma .....	1,883 34
5	May 2, 1919.	T. G. Code.....	Traverse certain lakes and rivers in the Districts of Sudbury and Algoma .....	2,650 00
6	May 8, 1919.	S. B. Code.....	Traverse the shores and islands of Charleston Lake and Red Horse Lake, Townships of Lansdowne and Escott, County of Leeds....	2,245 00
7	April 22, 1919.	Cavana & Watson .....	Survey certain township outlines, District of Sudbury .....	1,388 19
8	April 15, 1919.	J. S. Dobie ...	Survey a meridian line between the Districts of Thunder Bay and Kenora, and in the District of Patricia .....	5,286 00
9	April 15, 1919.	J. W. Fitzgerald.	Survey a meridian line in the vicinity of the Ground Hog River and subdivision of the residue of the Township of Nansen, District of Timiskaming .....	2,127 71
10	April 25, 1919.	C. E. Fitton...	To inspect Crown Surveys .....	816 72
11	May 9, 1919.	D. J. Gillon....	Survey a part of the boundary line between the Districts of Rainy River and Kenora, and certain meridian lines in Rainy River ..	2,121 85
12	May 8, 1919.	C. R. Kenny...	Traverse Missinaibi Lake and River and tributary waters, Districts of Algoma and Sudbury ..	2,320 48
13	May 1, 1919.	Lang & Ross...	Survey certain township outlines, District of Algoma .....	2,561 68
14	Aug. 6, 1919.	J. L. Morris ...	To re-establish part of the boundary of the Algonquin Provincial Park, District of Nipissing .....	3,994 94
15	April 15, 1919.	McAuslan & Anderson ...	Survey certain township lines, District of Algoma .....	2,378 47
16	May 1, 1919.	N. B. MacRostie.	Survey certain township outlines on the Kapuskasing River, District of Algoma .....	1,603 71

## Appendix No. 18.

Statement of Crown Surveys completed and closed during the twelve months ending October 31st, 1920.

No.	Date of Instructions.	Name of Surveyor.	Description of Survey.	Amount paid.
17	Sept. 30, 1919.	Phillips & Benner .....	Survey a meridian line and traverse that portion of Dog Lake lying north of the Township of Fowler, District of Thunder Bay.	\$ c. 3,259 76
18	April 15, 1919.	Phillips & Benner .....	To subdivide the Township of Fowler, District of Thunder Bay.	3,220 18
19	July 22, 1919.	G. L. Ramsey..	Traverse Long Lake, District of Thunder Bay .....	1,889 95
20	April 15, 1919.	W. A. Sibbett..	Subdivide the residue of the Townships of Casgrain and Hanlan, District of Algoma .....	1,934 30
21	Aug. 18 and Sept. 9, 1920.	L. Mooney.....	Survey of Gogama town site, District of Sudbury .....	626 30
22	Jan. 27, 1920.	L. Mooney ...	Survey of location L. M. 12, Township of Noble, District of Sudbury .....	74 30
23	June 9, 1920.	L. Mooney ....	Survey of timber line in Township 2 D, Mississauga Forest Reserve, District of Algoma .....	816 39
24	Mar. 22, 1920.	L. Mooney .....	Survey of Timber Berth E, District of Nipissing .....	213 30
25	May 12, 1920.	Sutcliffe & Neelands ....	Survey of certain outlines on Ground Hog River, District of Timiskaming .....	8,136 54
26	Aug. 10, 1920.	J. J. Newman..	Assisting Inspector of Surveys in survey of Point Pelee sand and gravel areas .....	66 75
27	July 24, 1917.	Oliver Smith ..	Survey of the concession line between concessions 9 and 10, opposite lot 17, in Township of Cartwright .....	24 00
28	Sept. 15, 1919.	M. E. Crouch ..	Expenses on the survey of the outlines of the Pic River pulp and timber limit .....	150 45
			Architectural Bronze & Iron Works, Toronto, of Canadian Allis-Chalmers, Ltd.:	
			C. L. Iron Posts.....	2,692 80
			do Iron Posts.....	816 00
			Municipal Iron Posts.....	560 00
29	July 16, 1920.	E. T. Ireson...	To accompany Canadian Aero Film Company on an aerial expedition to James' Bay .....	.....
				64,935 97

*Appendix No. 19.*

## SURVEY OF PARTS OF THE TOWNSHIPS OF DEVON AND HARTINGTON, DISTRICT OF THUNDER BAY.

FORT WILLIAM, February 25th, 1920.

SIR,—I have the honour to submit the following report on the survey of Devon Township in the District of Thunder Bay, carried out under instructions dated the 16th day of May, 1919.

On receipt of your instructions I engaged Mr. R. S. Kirkup, O.L.S., who served his time with me before going overseas, to assist in the work. After receiving notification of the preparation of the instructions, I received locally a representation favouring the employment of returned soldiers. My party as originally made up contained considerably more than half soldiers; unfortunately, many were not able to stand the bush life since their return from overseas; however, while I was not able to maintain as high an average of returned men on this party, some were always employed and as vacancies occurred the official in charge of that section of the employment bureau dealing with returned men always received the first requests for men.

Having completed the organization of the party I moved supplies and outfit by means of lorries to within three miles of the International Boundary. From this point outfits and canoes were packed in over the South Fowl Lake trail to Hospital Bridge on the Arrow River from which points the river was used as far as low water and rapids would permit.

Commencing at the intersection of the interior lines of the township, run last year, I ran east, following out the instructions, and struck good country all the way to the west boundary of Pardee Township. The depth of concessions three and four north of the blind line, I cut down to fifty chains depth east of the eighteenth sideline on account of the rocky nature of the country to the north, as shown in last year's report. I also found it advisable to limit the depth of concession one to sixty chains from the twelfth sideline east. The remaining concessions of the township are all eighty chains in depth with the exception of that part of concession four which fronts the west boundary, which is sixty chains in depth.

Following the completion of the survey of Devon Township, the survey of the part of Hartington Township covered by the same instructions was carried out. The fronts of lots one to twenty-four and the south-west and north-west corners respectively of lots one and twenty-four were properly posted, and referred to bearing trees, and the sixth, twelfth and eighteenth sidelines were duly established.

Separate plan and field notes of this part of the township have been prepared in accordance with my instructions.

In accordance with your instructions I laid out in the south-east portion of the Township of Devon a road diverging from a point in the twelfth sideline and running thence easterly until the sixth sideline was struck, as shown on the accompanying plan. On the sixth sideline access can be had to the east boundary of the township by way of the road allowance between concessions three and four.

The road allowance along the east boundary suggested in the instructions was not very practicable owing to the broken nature of the country, including one

very rough hill three hundred feet high, which crosses the boundary just north of the blind line between concessions two and three.

The chainmen were well posted in their work before starting out, and remained with me throughout the survey.

The lines will be found to be well opened up and blazed, with substantial well-marked posts planted, and bearing trees well chosen and marked where they were available. A number of the lines ran through *brulé* and on these we were only able to blaze old dry stumps and fallen trees. However, we planted pickets at frequent intervals, firmly in the ground, so there should be no difficulty in picking up the line.

All points required by the instructions were marked with iron posts. The traverse work was left to the end of the work and a set back was experienced in that both transits were damaged in the rapids, and it was necessary to secure another transit from the city.

Observations for Azimuth and Time were taken from time to time during the survey, as weather conditions permitted.

#### SOIL.

The township as laid out gives to each lot a share in the good arable land which lies throughout the valley of the Arrow River. The timber in a good many cases has been burnt off and in some the fire has been through a number of times, making the clearing of considerable areas comparatively easy. The land in the south-east corner of the township is broken by a large rocky range of hills, the land on either side, however, being of an agricultural nature.

The agricultural land referred to consists mostly of clay, white to light brown in colour, and clay loam, with some sandy loam scattered throughout the township mostly towards the east end. Along the Tote Road to South Fowl Lake the brush is cleared out and hay is growing freely. In concession three, lot twelve, the Pigeon River Lumber Company have a cultivated clearing of about thirty-five acres, on which they grow crops of some nature each year, and I believe the results are gratifying.

#### MINERALS.

The rock throughout the greater part of the township is granite, while there is considerable showing of low grade iron, along the Arrow River towards the west end of the township and in the range in the south-east end of the township.

#### TIMBER.

The whole township has been lumbered over at a comparatively recent date and if there was any good timber left it has long since been ravaged by the bush fires which have raged through that country from time to time. There is an area of small spruce on lots six to nine inclusive, just south of the Arrow River, and on lots thirty-three to thirty-six in the vicinity of the blind line, which would make good pulpwood in a few years.

The country is covered principally with small birch, poplar and banksian pine.



## GAME.

Beaver are the principal occupants of the region, in fact, there was hardly a line south of the Arrow River that did not cross a dam at some point or other. There are beaver houses in many places along the Arrow River. Moose and bear were plentiful. Some red deer were seen.

There are two main trails through the township, the South Fowl Lake trail, crossing the Arrow River on what is known as the Hospital Bridge in lot six, concession three, and the Silver Mountain trail, which in a general way follows the Arrow River on the north side to the north-west corner of the township, and thence to Silver Mountain; this trail is blocked considerably, west of the logging dam, by windfalls. There are many old lumber trails leading into these main arteries which would help the settler to open up his farm.

There is a well constructed logging dam across the Arrow River on lot sixteen, concession three, which holds the water back for several miles.

The Arrow River drops about forty feet at Mary Falls in lot four, concession two, but at the time of the survey the dam was holding back the water so that at the falls the water was only twelve feet wide by a foot and a half deep.

I beg to forward herewith field notes of survey, plans of townships, plan showing field notes of traverses of Arrow River and of the road laid out across lots seven to twelve, Devon Township.

I trust that everything will be found satisfactory.

All of which is respectfully submitted.

I have the honour to be, Sir,

Your obedient servant,

(Sgd.) E. R. BINGHAM,

Ontario Land Surveyor.

*The Honourable, the Minister of Lands and Forests,  
Toronto, Ontario.*

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*Appendix No. 20.*

SURVEY OF TOWNSHIP BASE AND MERIDIAN LINES, DISTRICT OF THUNDER BAY.

FORT WILLIAM, February 28th, 1920.

SIR,—I have the honour to submit the following report on the survey of Base and Meridian Lines in the District of Thunder Bay, carried out under your instructions dated 8th of July, 1919, being an extension of my instructions for the survey of parts of the Townships of Devon and Hartington, dated 16th of May, 1919.

My instructions called for the employment of two men as land cruisers and I was fortunate eventually in securing Kenneth Spence who prior to his service

overseas had had years of experience on railway preliminary and location surveys, and similar work, as instrument man, etc.; and Lionel Merritt who has been raised on a farm in this district and knew what was involved in the development of a bush farm. Together they were a splendid team.

They were instructed in examining land to have in mind the point of view of a possible future settler, and to consider at all times the possibility of future development of the land with the prospect of success for the settler.

Mr. R. S. Kirkup, O.L.S., assisted throughout the work, and the subsequent preparation of the returns.

Our party and supplies were taken in by way of Nolalu on the P. D. & W. branch of the Canadian National Railway, thence by team as far as road and trail held good, thence by packing to the north-west corner of Marks Township. After diligent search the stump of the old post was found where a logging road crossed the line marking the north boundary, the top of the post being found at the side of the road. This point of post was renewed according to instructions.

An observation was then taken and the lines started west and north.

While running the first base line westward, two men searched for three days to find a trail through the westerly part of Aldina. They then returned and advised that owing to the roughness of the country to be travelled the moving of part of the outfit be made back to Nolalu and that the north-west corner of Strange Township be reached from Mile 47 on the P. D. & W. branch.

Accordingly, the whole party and part of the outfit was moved round this way to the north-west corner of Strange Township.

At this point I intersected the north and west limits of Strange Township as marked by blazed lines; at the point of intersection a post was found marked T.B.W. 2, T.B.W. 3, and W. 4. I planted our corner posts at this intersection.

The survey was then proceeded with according to instructions, the first and second meridians being carried north from the north-west corners of Marks and Strange Townships respectively, the first base line being run west from the said corner of Marks as a chord of a parallel of latitude, and the second base line being run east and west as chords of a parallel of latitude from a point six miles north of the north-west corner of Marks Township; double chainage was used to establish the starting point of the second base line as also in other parts of the work.

On the west limit of Conmee Township connection was made with a post of location R 710 on the south side of Thunder lake. The first meridian was run north to intersect the Dawson Road and connection made with one of the posts between lots seventy-eight and seventy-nine. The second meridian was run north to cut the main line of the Canadian National Railway and connection made with the B.C. of 3 deg. curve immediately west of the west end of Annex Siding, the noted chainage of same being obtained from the railway engineers.

All the lines will be found to be well opened up and well blazed throughout; large well-marked posts were planted at each mile with iron posts at every third mile as indicated in the instructions. Bearing trees were carefully chosen and marked, where such were available.

Throughout the work careful search was made for the lines of the old locations shown on the plan accompanying instructions and ties made wherever such could be found.

Observations for Azimuth were taken at least once on each line, time being carefully checked by meridian transits of the sun.

## SOIL.

There was considerable loam and clay land met with, but much of it was so broken by rocky hills, and contained so many boulders as to be unfit for agricultural purposes. The only area that seemed really desirable agriculturally was the north four miles of Sackville Township, and the south two miles of Laurie Township. In the south-west corner of Horne Township an area two miles by two miles is also good. The southerly two miles of Sackville Township consists of loam, but as the south boundary is approached it is very broken and there are a lot of boulders. The agricultural area extends west of the second meridian for approximately a mile from the third mile of the west boundary of Sackville to the second mile of Laurie.

There are numerous trails throughout the district opened up in lumbering operations. These are now blocked considerably by windfalls, but could readily be opened up for the first needs of settlers.

## TIMBER.

Practically the whole area covered by the survey has been cut over for lumber at a comparatively recent date.

There is, however, some good white pine in the south-easterly part of Adair Township, one particularly good area lying from one-half a mile to a mile north of the north boundary of Marks, opposite lots seven and eight of that township. There is good white pine scattered throughout the east three miles of the south two miles of Adair Township.

## MINERALS.

The rock throughout this area is mostly greenstone and granite.

There was very little surface showing of minerals except iron, of which there is some indication throughout the whole region, particularly on the southerly part of the west boundary of Sackville Township.

## GAME.

Bears and beaver are very plentiful in this area; moose and red deer were also seen, but were not very plentiful.

I am forwarding herewith plan and field notes of survey, timber plan, affidavits, accounts, etc., and trust that everything will be found satisfactory.

All of which is respectfully submitted.

I have the honour to be, Sir,

Your obedient servant,

(Sgd.) E. R. BINGHAM,

Ontario Land Surveyor.

*The Honourable, the Minister of Lands and Forests,  
Toronto, Ontario.*

*Appendix No. 21.*

## SURVEY OF TOWNSHIP OUTLINES, DISTRICT OF ALGOMA.

ALVINSTON, December 31st, 1919.

SIR,—I beg to report that in accordance with instructions issued April 15th, 1919, for the survey of township outlines in the District of Algoma, along the Opazatika and Kapuskasing Rivers, and south of the Transcontinental Railway, I proceeded to Opazatika Station on July 2nd, after the usual preparation and after engaging a survey party, paddled up Opazatika River to the south boundary of McCrea Township and after packing equipment to the south-west angle of McCrea Township, the outline work was commenced.

The work was completed and the plan and field notes submitted herewith show the character of country in detail, the waters intersected by the lines, and the plan and timber map show, generally, the division, as nearly as could be ascertained, of the classes of country through which the lines passed.

Owing to low water at the season the work was necessarily commenced, the travel to the survey was rendered quite difficult as the Opazatika is very shallow and landings could not be made at the usual portages, and owing to the dry season in the summer it was quite difficult to obtain water for drinking purposes, and in one case water was carried  $1\frac{3}{4}$  miles to the camp for general use.

Forest fires in other sections of the country causing a general smoky atmosphere rendered it most difficult to secure astronomical observations in the summer and in the fall the weather was so wet and cloudy it was equally difficult to secure observations at the times such were needed. However, nine observations were obtained and these are given on pages 73 to 81 of the field notes. The calculations were made from "Astronomical Field Tables" as issued from the office of the Surveyor General, Ottawa.

The variation of compass varies from  $6^{\circ}$  to  $9^{\circ}$  west—generally from  $6^{\circ}$  to  $7\frac{1}{4}^{\circ}$  west of Cargill Township and  $7^{\circ}$  to  $9^{\circ}$  through Cargill.

The lines were well opened out and properly blazed, in fact, these are wider than usual.

Posts of the best material obtainable were planted at the end of each mile or as shown in the field notes submitted herewith, but in some cases it was impossible to mark bearing trees as some posts were planted in open country (so far as trees are concerned) or in *brulé* having a growth of poplar from 1 in. to 2 in. diameter. The posts were well made, in general, and properly marked with a timber scribe.

The twenty iron posts sent from your Department were planted as well, after being properly marked as shown in the field notes.

The astronomical observation taken at the north-west angle of Parnell Township was used to run south astronomically along the boundary of Shearer and Parnell to VIII miles plus 22.83 chains on the same line.

The observation taken at this point and shown on page 74 governed the line south to 111 miles plus 10 chains on the boundary of Ecclestone and Fergus, and the observation at that point the line to the south end of the line between Fergus and Ecclestone Townships. This observation is given on page 75.

The boundary of Shearer and Fergus was run by angle from the line between Parnell and Shearer Townships for a chord of a parallel of latitude, as was also the boundary between Parnell and Ecclestone to VI miles plus 2.64 chains, where



the observation given on page 81 again governed the line to the north-east angle of Ecclestone, and after turning along the meridian, the boundary of Ecclestone and Cargill to 0 miles plus 66 chains, and from this point the observation given on page 76 governed the course of the boundary of Ecclestone and Cargill to the south end of the line, no further observation being obtainable.

Commencing at the mile post XVI plus 32.41 chains on the south boundary of Ecclestone no observation was obtainable until 11 mile plus 6.80 chains was reached on this production and the line was corrected as shown in the observation given on page 77. This course was the governing course after turning the proper angle for a 9 mile chord at the south-east angle of Ecclestone Township, to V miles plus 6.04 chains on the south boundary of Cargill, when the line was again corrected as shown in the observation on page 78, and this course governed to the south-east angle of Cargill.

As will be noted the lines east and west were run on chords for the lengths of the townships with the Orientation meridian through the centre of the township, and the lines north and south are run on the astronomical meridian.

On the line between Cargill and Sulman Townships which was run from the north end, no observation was obtainable at this point and the line between Cumming and Owens was produced to 1 mile plus 45.47 chains on the boundary of Cargill and Sulman when it was found after observation was obtained that the line had a bearing as shown on page 79 and it was then decided to run south  $0^{\circ} 2'$  east to the south-east angle of Cargill to balance the error in the north 1 mile plus 45.47 chains, and this bearing was checked by the observation given on page 80 and the line found correct, and continued to the south-east angle of Cargill.

#### TOPOGRAPHY.

Generally, with the exception of the southern end of the line between Ecclestone and Fergus and immediately east of the Opazatika River on the south boundary of Ecclestone where the country is undulating, the country is level or rather slightly undulating and as a rule inclined to be swampy. A few small creeks, most of which are without flow in a dry year, are met with, and there are no lakes of any importance.

#### SOIL.

The soil is composed of a subsoil of clay which has an admixture of sand which should make it easily workable and the topsoil is a loam and in the lower levels, a muck.

Generally, moss covers the soil west of the Opazatika River, where timber was not burned in the last fire. East of this river, fire destroyed what timber grew, and as well burned the muck but there has since formed a slight coating of loam on the upper levels, and in the lower levels moss again covers the soil.

The soil is adapted to raising general roots and grains and is very much of the nature of the soil at the Dominion Government Experimental Farm at Kapuskasing, where some fine roots and grains are grown.

The heavier clays will later require tile drainage to make the soil fully productive.

Drainage of the lower levels will not be difficult as good fall is obtainable. A few outcrops of ordinary country rock are to be found.

## TIMBER.

The only timber of considerable size is to be found west of the Opazatika River, ranging from 3 in. to 10 in., and in some places to 12 in. or 14 in. This timber is spruce, generally from 4 in. to 8 in. diameter, poplar 4 in. to 14 in., balsam, 2 in. to 8 in., W. birch, 3 in. to 10 in., dead tamarack, 4 in. to 8 in., with some small green tamarack (a new growth), balm of gilead in places 4 in. to 12 in. Few cedar of value are to be found off the river.

This portion is also covered with a growth of underbrush, chiefly alders, hazel and moose-maple.

Generally, the timber classification changes rapidly and there does not seem to be any body of timber large enough to make profitable operations on a large scale.

East of the Opazatika River, the country has been burned over and is now covered with a growth of poplar from 1 in. to 4 in. diameter and white birch about the same size, with a few patches of original timber of the class found on the west side of the river and generally covered with a thick growth of alders and hazel and in places with a thick growth of small spruce. In places the original spruce and tamarack have fallen in "windfalls" which make travel across such areas very difficult.

The timber east of the Opazatika River cannot be said at present to be of great value as the poplar and birch are only from 1 in. to 4 in. diameter, but in time may be very fine cutting.

## ROADS.

Probably the best way of reaching the area covered by the survey will be later determined; possibly a road from Lowther on the Transcontinental Railway would give the best result. No deposits of gravel were observed on the lines run.

## MINERALS.

No minerals of any kind were found and the few outcrops of rock are grey country rock of the kind usual to this section of the country.

## GAME AND FISH.

Beaver are quite plentiful in this section of the country and have been very industrious in damming up the small creeks, and as many as three families are to be found above one dam in places. The work of these animals considerably hindered the progress of the survey.

Moose are plentiful along the Opazatika River and many signs of bear are to be found east of the river. There does not appear to be many deer in this section of country.

Small game does not seem to be so plentiful as usual and only a few partridge and ducks are to be found. Signs of mink and muskrat were observed.

The fish to be found in the waters consist generally of pike and pickerel; and a species of "wall-eyed pike." The fish are not large but are quite plentiful.

## WATER POWERS.

No survey of water powers was made, as I understand this work was completed by the surveyors making the traverse of the Opazatika and Kapuskasing

Rivers. The courses of the rivers are shown on the accompanying plan as given on the plans for the traverse survey.

With this report is respectfully submitted:

1. A general plan.
2. A timber map.
3. Field notes of the survey, including astronomical observations.
4. The account in triplicate.

I have the honour to be, Sir,

Your obedient servant,

(Sgd.) A. S. CODE,

Ontario Land Surveyor.

*The Honourable, the Minister of Lands and Forests,  
Toronto, Ontario.*

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*Appendix No. 22.*

SURVEY OF A MERIDIAN AND BASE LINE IN THE DISTRICTS OF KENORA,  
THUNDER BAY AND PATRICIA.

THESSALON, February 5th, 1920.

SIR,—In accordance with your instructions dated April 15th, 1919, I have completed the survey of a meridian and base line in the Districts of Kenora, Thunder Bay and Patricia, and beg to submit the following report.

The meridian line was the northerly extension of the boundary between the Districts of Kenora and Thunder Bay, and was commenced at the northerly extremity of the portion of the said boundary which was run as far as the 120th mile in 1900, by the late A. Niven, O.L.S. The meridian line crossed the narrows of Lake St. Joseph, entering the district of Patricia, near the 62nd mile, and was continued into the district of Patricia as far as the 120th mile. From this point a base line was run due west, on six mile chords of a parallel of latitude, for a distance of 40 miles, the 40th mile coming in a fairly large river which enters Cat Lake from the north. The starting point of the meridian line is located about eight miles north of Sturgeon Lake. Sturgeon River was crossed just north of the 2nd mile post, and the Canadian Government Railway was crossed at 12 miles 9.39 chains, at a point 19.35 chains east of Fowler Station.

The meridian line was run north astronomically, and was well cut out and blazed. A substantial wooden post of the best timber available was planted at the end of every mile, excepting where the end of a mile came in a lake or stream. Wherever this occurred, a post was planted on the nearest shore and the number of the nearest mile together with the distance from that mile was marked on the post with a scribing iron. Every regular post had the number of the mile marked thereon with a scribing iron. At the end of every third mile on the meridian line, an iron post was planted beside the wooden one, and the number of the mile marked thereon with a cold chisel. In case the end of a mile requiring an iron

post came in water, the iron post was planted beside the wooden post on the nearest shore, and was similarly marked. The iron post in every case was a piece of  $1\frac{1}{4}$  in. iron pipe, 3 feet long, pointed at one end and forged at the other, and painted red. Wherever possible, two bearing trees were marked with the letters B.T. and the distance and bearing of each tree recorded in the field notes. Substantial stone mounds were erected around the posts wherever stones could be secured.

The base line, as previously stated was run west astronomically on six mile chords of a parallel of latitude, and the same system of planting and marking the posts was followed as in the meridian line, excepting that as the base line was 40 miles long, and as I was only supplied with 10 iron posts for this line, it was obviously impossible for an iron post to be planted every three miles. It was decided to plant an iron post at the end of every six mile chord, and the rest at three mile intervals, where convenient. Iron posts were therefore planted at the following miles: 6, 12, 15, 18, 21, 24, 27, 30, 36 and 40.

On account of the length of the line, and the fact that no check was possible, the line was cut out wide enough to permit of the longest possible sights. The instrumental work was almost all done by Mr. W. B. Beatty, O.L.S., and he was most careful and accurate in his work. Only twice was it necessary to make a correction of more than two minutes in the bearing of either the meridian or the base line. Transit stations in swampy ground were avoided as much as possible, but wherever they were absolutely necessary, stakes were driven deep into the ground for the tripod to rest upon, and a platform built where necessary for the transitman to stand upon. A Waltham sidereal watch was used, and observations for both azimuth and watch correction were taken at every opportunity. These observations were all taken in daylight, and the azimuth calculated by means of the tables supplied by the Surveyor-General at Ottawa, for such purposes. A table showing the results of the observations and the corrections applied is included in the field notes.

The chaining was all done by two experienced chainmen, and every precaution taken to ensure accuracy. A five chain tape was always available, and all water stretches under five chains were measured with it, thus avoiding numerous small triangulations. This long tape was of very great assistance in chaining base lines for triangulating across the larger lakes, satisfactory base lines being obtained by this means with much less difficulty than would have been possible with a shorter tape.

The actual cutting of the line was commenced on May 27th, and completed on September 23rd.

Attached to the party were Professor Parsons of the Department of Mineralogy, Toronto University, and two assistants, representing the Bureau of Mines, and Mr. Henry Bell, of Pembroke, with an assistant. These gentlemen were instructed to report on the geological and on the timber and agricultural possibilities respectively, of the country adjacent to the line. They performed their duties in a most faithful and painstaking manner, and as my time was almost entirely devoted to the carrying on of the operations incidental to the survey, it was impossible for me to see as much of the country as they did. They will present their own reports, and will deal with their respective subjects in a detailed manner, that is impossible for me, for obvious reasons. A few general remarks on the economic possibilities and physical features of the country, however, may not be out of place.



The line runs through an entirely unsettled section of Northern Ontario, the only inhabitants being a few Indians who trap in the winter, but who do not appear to travel away from a few main canoe routes during the summer. Some of the local Indians were employed at times on the survey, and their local knowledge of canoe routes and of the country generally was found to be of very great assistance. These Indians were industrious, reliable and above the standard of intelligence that one would naturally expect.

The agricultural possibilities of the country are practically nil. The land is for the most part rocky and stony, with considerable areas of swamp consisting of a layer of muskeg more or less deep, underlain with sand and boulders resting on the rock beneath. Some fairly prominent ridges of sand and boulders occur, but not so frequently along the southerly portion of the meridian line as further north. The whole region south of Lake St. Joseph has been swept by fire, apparently about the time of the construction of the National Transcontinental Railway, and the Thunder Bay Branch of the Grand Trunk Pacific Railway. This portion of the country is very rough and rocky with numerous lakes of various sizes occupying the depressions between the ridges. About sixty per cent. of the territory seen from the line, south of Lake St. Joseph, has been burnt within ten or twelve years, and the timber destroyed. The economic loss in this respect has been very great, as a large amount of good spruce and jack pine timber has been destroyed. These burnt areas are now growing up with the usual second growth of jack pine, spruce, poplar and white birch characteristic of the country. In places the country is almost impassable on account of the tangled masses of fallen timber, and the work of cutting the line through these sections was exceedingly laborious. The green timber is largely confined to the swamp areas, and in some cases the spruce is of fair quality, but the average is rather small. The best timber seen on the line south of Lake St. Joseph is close to the Sturgeon River, and again north of the large bay extending to the east of Lower Green Grass Lake, near mile 41; there being in both cases a fine growth of large jack-pine and spruce. A few small groves of red pine were seen, the largest one being east of the narrows between Green Grass and Lower Green Grass Lakes.

North of Lake St. Joseph the country is not so rough, there being very few of the rock ridges which are so common farther to the south. The country here is more gently undulating, with low lying morain like ridges of sand and stones, with larger areas of muskeg between. Between miles 65 and 68 there is a prominent ridge of sand which has been burnt over, of which large portions are now absolutely bare. Some parts of this appear to consist of a sandy loam that might be productive, but the area is small. A prominent ridge occurs at mile 115. This is one of the highest ridges in the country north of Lake St. Joseph. Another prominent ridge of sand and gravel occurs north of mile 26 on the base line and extends to the line at mile 27. This ridge is surrounded by a muskeg as far as could be seen, but is fairly heavily timbered with spruce, birch and jack pine.

North of Lake St. Joseph there is a much larger area of green timber, than south of the lake, although the average growth is smaller and scrubbier, particularly in the more northerly portions of the country. There is one fairly large burnt area extending from mile 101 to mile 111, and for a considerable distance on either side of the line. This area has been burnt within a year or two. The whole country north of Lake St. Joseph, while largely green, has been burnt over at intervals, and in very few places was timber seen that is over 75 years old.

The second growth which comprises much of the timber is of all ages up to 75 years. These fires appear to have started from along the main canoe routes used by the Indians, and are probably largely due to the carelessness of travellers in the use of fire. The timber growth in this section is coming along very nicely, and although the annual growth is slow, a new forest will undoubtedly grow up that will be of great value provided the fires can be prevented.

The country south of Lake St. Joseph is intersected by an exceedingly intricate system of lakes and streams, which afford means of communication by canoe in any direction. Many of the lakes are of fairly large size, almost invariably with deeply indented shores, and are dotted with numerous islands. The natural beauty of many of these lakes, the shores of which have not been rendered desolate by fires, can hardly be surpassed.

The divide between the waters flowing to the Winnipeg River and to the Albany River, occurs near the 24th mile on the meridian line, although the exact location could not be determined with any degree of certainty. South of this divide the country is drained by the Sturgeon River and its northern tributary, the Dog River, of which Island Lake is an expansion. North of this divide an exceedingly intricate system of lakes with short river stretches between flows towards the Albany River by way of Lake St. Joseph, which it enters about three miles east of mile 65 on the meridian line.

The greater part of the territory adjacent to the line north of Lake St. Joseph is drained by tributaries of the Attawapiskat River which finally enters James Bay about sixty miles north of the Albany River. The divide between Albany and Attawapiskat waters occurs quite close to Lake St. Joseph, although here again it is impossible to designate the exact location with any degree of certainty. The largest streams crossed north of Lake St. Joseph are the Gitchie Seebe at mile 111, and the Otokwin River at mile 113. These streams meet about three or four miles east of the line, forming the Otokwin branch of the Attawapiskat River. These are both fairly large streams, with sluggish current broken with occasional rapids, at most of which the fall is low, and which are mostly caused by boulder bars obstructing the streams, and which make canoe navigation rather difficult in places. The eastern portion of the base line is drained by a tributary of the Otokwin River, while the western portion is drained towards the Albany River by way of streams entering Cat Lake.

There are no water powers of any great importance, chiefly owing to the fact that very few of the rapids or falls are of any great height. A number of small water powers could be developed, however, as the facilities for water storage are excellent on account of the many lakes. There are some falls on the Albany River a few miles east of the outlet of Lake St. Joseph which may be of great importance in the future, on account of the large drainage area tributary to Lake St. Joseph, and the splendid opportunity this lake would afford for reservoir purposes. These powers are from forty to sixty miles east of the line, but it is thought well to give them passing mention as they will undoubtedly play a most important part in any economic development that may occur in this part of the country. Similarly on the Cat River, which enters Lake St. Joseph at the west end, a number of falls occur. None of these falls are of great height, but water powers of considerable importance could be developed, as the drainage area is fairly large and the facilities for water storage cannot be excelled. These water powers on the Cat River are, of course, much smaller than the ones on the Albany River east of Lake St. Joseph.

Lake St. Joseph is, of course, the most important geographical feature of this section of the country. It is a narrow, straggling sheet of water about sixty miles long, from Root Portage at the western extremity to where the Albany River flows out at the eastern end. It has an exceedingly intricate shore line in places with many deep bays extending far back from the main body of the lake. There are innumerable islands of all sizes, from small bare rocks to some which are of several miles in length. The lake for the greater part of its extent is rather narrow, but in some places widens out to a width of from six to eight miles. The numerous islands make it difficult in many places to get a good idea of its dimensions, but the average width is probably not much over two miles. Much of the country around Lake St. Joseph has been burnt over at different times in the past, and the timber along the shore is largely second growth of different ages. The timber on many of the islands appears to be older than that on the main shore, probably due to the fact that the islands escaped the fires. The shores of Lake St. Joseph are for the greater part low lying, although some rather prominent hills occur around the western end of the lake. Lake St. Joseph is called the head of the Albany River, although the Cat River which enters the north-western extremity of the lake takes its rise probably one hundred miles or more to the north-west and by the time it reaches Lake St. Joseph it is a considerable stream.

The Hudson's Bay Company have a post called Osnaburgh near the eastern end of Lake St. Joseph, where a considerable trade in furs is carried on with the Indians. Supplies for Osnaburgh Post are brought in from Hudson Station on the Canadian Government Railway, over a very good route by gasoline boat across Lost Lake down English River and across Lac Seul, thence by canoe up Root River to Root Portage at the western end of Lake St. Joseph. This portage is over the divide between Winnipeg and Albany River waters. From here supplies are taken to Osnaburgh by a small steamboat which is operated on Lake St. Joseph by the Hudson's Bay Company.

The geological features of the country will be separately reported upon by Professor Parsons, therefore, they will receive but passing mention in this report. The prevailing rock formation over the whole territory is Laurentian, typical rocks being granite and gneiss. Several areas of Keewatin rocks were encountered, and in almost every case there was a local magnetic attraction of the most pronounced character. The first of these occurs in the vicinity of Island Lake about ten miles north of the Canadian Government Railway, and extends easterly to Lake Savant. The most important area of magnetic disturbance in this belt occurs on Kashaweogama Lake lying to the east of Island Lake. An important belt of Keewatin rock occurs in the vicinity of Lake St. Joseph, and here again the magnetic disturbances are of the most pronounced character, and extend for a long distance east and west of the line. Low grade hematite and magnetite were seen on some of the islands in the western portion of the lake. Another belt of Keewatin occurs between the 79th mile and Clearwater Lake, the contact being in the lake, probably between the 87th and 88th miles. This belt is possibly an eastern extension of one which crosses Cat River near Slate Lake, and appears to be of considerable extent.

Still another belt of Keewatin extends for a considerable distance along the Gitchie Seebe River west of the meridian line, but apparently not extending as far east as the line. Considerable magnetic disturbance occurs on this belt, and here again there are indications of iron ore.



The base line as far as could be seen, lies entirely in a Laurentian area, the prevailing rocks being granite and gneiss typical of this region.

A peculiar feature of these Keewatin belts is the fact that the intensity of the magnetic disturbances is much greater on some of the lakes than on the shore. This may possibly indicate the existence of more or less extensive bodies of iron or other magnetic ore, under the waters of the lakes. If I might venture a suggestion, it would be that where there are indications of iron ore, particularly east of Island Lake, and on Lake St. Joseph, a more detailed examination be made with a view of determining definitely the possibilities of developing ore bodies on a commercial scale.

The climate is similar to that of other sections of Central Canada in the same latitude. The early part of the summer of 1919 was intensely hot and dry, and the growth of vegetation was exceedingly rapid. An instance of this is the fact that ripe blueberries were picked on the 30th day of June, and by the end of the first week in July they were in great abundance. Potatoes and roots generally do well where any attempt is made to cultivate them, although the amount of arable land is very small. A few of the Indians have small potato patches. One of these was seen on a point on Lake St. Joseph about the 16th of July, and showed a good healthy growth. This patch had recently been hoed, and showed every evidence of care and industry. A patch of potatoes at the Hudson's Bay Company's post at Osnaburgh were in blossom on the 19th of July, and looked very well. A slight frost occurred on the night of the 7th of August. On the 24th of September the Hudson's Bay Company's post at Cat Lake was visited on our way home, and a small patch of potatoes showed hardly any evidence of frost. The small lakes usually commence to freeze over about the 15th of October, and the larger ones are usually frozen over by the end of that month.

Moose and red deer are quite common south of Lake St. Joseph, but not so much farther north. Caribou are frequently seen in this region, becoming more plentiful as one goes farther north. The ordinary fur-bearing animals are quite plentiful, although great destruction of animal and bird life has been caused by fires which have overrun the country. Partridge were scarce and hardly a rabbit was seen all summer. Wild ducks are not as plentiful as one would expect. Fish are numerous in all the larger lakes and streams, the principal varieties being pike, pickerel, and suckers. Some excellent white fish were secured from an Indian on Lake St. Joseph who had a net set in the lake. The Indians appear to make use of fish weirs to a considerable extent, and on some of the streams weirs were seen which showed much ingenuity in construction.

The returns to be filed in your Department consist of this report, copies of the field notes properly certified, a general plan on mounted drawing paper on a scale of two miles to an inch, a timber plan on tracing linen on the same scale, and my accounts in triplicate and I trust that these will be found satisfactory.

Much of the information on the plans was obtained from sketches made by Professor Parsons and Mr. Bell, and I wish to express my appreciation of the hearty manner in which these gentlemen co-operated with me in seeing that the various phases of the work were carried on to a successful conclusion. I also wish to heartily thank Mr. Jabez Williams, transport officer for the Hudson's Bay Company at Lac Seul, and Mr. R. Hooker, of Osnaburgh, for courtesy and assistance rendered the party during the season.



In conclusion I would venture to predict that the economic development of this section of the country will largely depend upon the discovery of valuable minerals in the various areas of Keewatin rocks, and the chances of such discoveries would appear to be not unfavourable.

I have the honour to be, Sir,

Your obedient servant,

(Sgd.) JAMES S. DOBIE,

Ontario Land Surveyor.

*The Honourable, the Minister of Lands and Forests,  
Toronto, Ontario.*

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*Appendix No. 23.*

SURVEY OF A MERIDIAN LINE IN THE VICINITY OF THE GROUND HOG RIVER,  
IN THE DISTRICTS OF SUDBURY AND TIMISKAMING.

PETERBOROUGH, April 15th, 1920.

SIR,—I have the honour to report that agreeable with instructions from your Department dated April 15th, 1919, I have completed the survey of meridian lines in the Districts of Sudbury and Timiskaming.

As instructed, I commenced the survey at the north-east angle of the Township of Muskego and after getting the necessary observations for latitude and azimuth, I ran due north astronomically eight miles seventy-one chains and sixty-six links where I intersected the base line surveyed by O.L.S. Niven in 1899 at a point one hundred and thirty-three chains and forty links east of his fifty-four mile posts. From O.L.S. Niven's fifty-four mile posts I ran north astronomically eight miles seventy-eight chains and ninety links where I intersected O.L.S. Neeland's first base line at a point one chain and sixty-nine links west of his nine mile posts. After moving these posts to the intersection of the meridian and base line I produced my meridian north astronomically nine miles and sixty-four links where I intersected O.L.S. Neeland's second base line at a point two chains and seventy links west of his nine mile posts. After moving these posts to the intersection of the meridian and base line I again produced my meridian north astronomically eight miles seventy-nine chains and thirty-one links where I intersected O.L.S. Neeland's third base line at a point four chains and fifteen links west of his nine mile posts. After moving these posts to the intersection of the meridian and base line I again produced my meridian north astronomically twenty-four miles six chains and five links to the south boundary of the Township of Nansen which I intersected at a point one hundred and eight chains and thirteen links east of the south-west angle of said township.

The meridian line from the north-east angle of the Township of Muskego to O.L.S. Niven's base line passes over a rough, rocky, broken country totally

unfit for agriculture and which has been overrun many times by fire and is now destitute of all timber of value. Several lakes were crossed on this line, all of which contain good clear water but little if any fish. The rock is of the Huronian formation but as far as I could see, and I examined it closely many times, is destitute of mineral. From O.L.S. Niven's base line to the southerly limit of the clay belt, a distance of a little over four miles, the line passes over a gently undulating sandy country which has evidently been repeatedly burnt over and is now practically destitute of either green or burnt timber of any description. From this point southerly (limit of the clay belt) to the south boundary of the Township of Nansen the character of the country is all the same, generally level or gently undulating and covered with spruce up to fourteen inches, poplar to twenty inches, white birch to ten inches, dead tamarac, scrub cedar and alder underbrush—the land is good clay free from stone with clay subsoil and will, no doubt, some day support a large number of people.

Patches of brulé are met with here and there and especially along the westerly shore of the Ground Hog River. Practically no outcroppings of rock were encountered in this forty-seven miles. The Piskanogami River is crossed between the first and second mile north of O.L.S. Neeland's first base line; it is a fine clear stream and has many valuable and easily developed falls, two of which lie just east of my meridian.

The Ground Hog River—which I did not cross with my meridian but which is very close to the line at a point twenty-seven miles north of Niven's base line is also a fine river for many miles but is sadly broken by an eight mile flat rapid between this point and the Grand Trunk Pacific. This tract of country lying between the Canadian Northern and Grand Trunk Pacific Railways is a veritable paradise for hunters and trappers. Moose are very plentiful and it is not an odd sight to see four or five in one of the rivers or lakes at the same time. Bear, beaver, marten and otter were also frequently seen along the rivers.

I also beg to submit with this report a plan showing the topography of the country passed over, also a timber plan and field notes all of which I trust will be found complete and satisfactory.

I have the honour to be, Sir,

Your obedient servant,

(Sgd.) J. W. FITZGERALD,

Ontario Land Surveyor,

*The Honourable, the Minister of Lands and Forests,  
Toronto, Ont.*

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*Appendix No. 24.*

SURVEY OF PART OF THE TOWNSHIP OF NANSEN, DISTRICT OF TIMISKAMING.

PETERBOROUGH, April 15th, 1920.

SIR,—I have the honour to report that agreeable with instructions from your Department dated April 15th, 1919, I have subdivided the residue of the Township of Nansen in the District of Timiskaming into regular lots of one hundred

and fifty acres each. The residue of the township allotted to me for subdivision consisted of lots one to twenty-nine inclusive, in concessions one, two, three and four, the northerly eight concessions having been subdivided by O.L.S. Dempster in 1912. Agreeable with your Departmental instructions, I commenced the subdivision at a spruce post marked one and one-half miles on the east boundary of the township, planted by O.L.S. James Hutcheon in 1910, and after securing the necessary observation for azimuth at this point, I ran due west astronomically across the first six lots leaving half a chain for road allowance immediately west of the east boundary and one chain for road allowance between lots six and seven. I then picked up O.L.S. Dempster's side line between lots six and seven at the front of the fifth concession and produced it due south astronomically to the south boundary of the township. I then produced the line between concessions two and three west across lots seven to twelve inclusive. I then picked up O.L.S. Dempster's side line between lots twelve and thirteen at the front of the fifth concession and produced this line south astronomically to the south boundary. I carried out the same procedure to the westerly limit of the township.

All the regular lots were made twenty-five chains and twenty-five links in width by fifty-nine chains and fifty links in depth containing one hundred and fifty acres each. I also cut out and rechaind the south boundary giving the regular lots on the front of the first concession a uniform width of twenty-five chains and twenty-five links. Substantial posts of the most durable wood procurable in the vicinity were planted to define the corners of the lots and intersections of the lines and the iron posts forwarded to me from your Department were also properly marked and planted at the points indicated on the projected plan, which points I have also indicated on my plan.

The portion of the township subdivided by me is well watered by numerous creeks, there is, however, only one lake of any extent which lies on lots five and six in the first concession.

The first four concessions of this township may be described as a generally level or gently undulating country timbered with spruce up to twelve inches in diameter, poplar up to twelve inches in diameter, white birch, balsam and cedar up to ten inches in diameter interspersed with swamps covered with spruce, dead tamarac, scrub cedar and alder underbrush, scattered patches of brûlé of small extent and covered with small poplar, white birch and willow. The soil on the uplands is, generally speaking, a good clay loam rich in humus and practically free of stone, with clay subsoil. In the lowlands and swamps the soil is black muck with clay subsoil. Only a few small outcroppings of rock occur in this part of the township. I consider fully fifty per cent. of the first four concessions suitable for mixed farming and am of the opinion that with a proper system of drainage, fully fifty per cent. of the remainder can be made so.

I also beg to submit with this report a plan showing the acreage and topography, also timber plan and field notes all of which I hope will be found complete and satisfactory.

I have the honour to be, Sir,

Your obedient servant,

(Sgd.) J. W. FITZGERALD,

Ontario Land Surveyor,

*The Honourable, the Minister of Lands and Forests,  
Toronto, Ont.*

*Appendix No. 25.*

## SURVEY OF PART OF THE BOUNDARY LINE BETWEEN THE DISTRICTS OF RAINY RIVER AND KENORA.

FORT FRANCES, February 16th, 1920.

SIR,—Instructions to survey part of the boundary line between the Districts of Rainy River and Kenora, and three meridian lines running south therefrom, were received early in June, but the survey was not commenced until August 4th, as, on account of the general strike, it was impossible to procure any tents in Winnipeg.

I left Fort Frances on August 4th, and proceeded via the Cascades and Manitou Lake to Smooth Rock Lake, where my first camp was established. Having found traces of the 6th meridian near Bear Lake, I re-ran the line through dense second growth, on 1894 brûlé, and found the iron post marking the 24th mile. From this post I started the boundary line, my course being determined from the meridian line, and made preparations to observe Polaris at night. I was unable to see the star as a heavy rain storm came on in the afternoon and lasted all night. I therefore ran the line on to Smooth Rock Lake and there observed Polaris at Eastern Elongation, finding the line .02' N. Correcting for this I continued west, to the 6th mile, where I deflected north six minutes, checking the instrumental deflection by the use of a deflection offset of 1.378 inches at a distance of one chain. Thereafter, this deflection was used at each six miles. Wooden posts were planted at each mile and iron posts at every three miles as instructed.

I continued the line to the 12th mile, whence I ran south twelve miles on the 1st meridian, and on the completion of this line I continued west on the base line to the 24th mile, marking the posts as instructed from 1 to 12 in each section of the base. I then ran south again twelve miles on the 2nd meridian, and in a similar manner I ran west to the 36th mile and thence south on the 3rd meridian as far as Kishkutena or Height of Land Lake.

Winter set in very early, there was a heavy fall of snow on October 10th, and thereafter the weather was very bad, snow, rain or sleet nearly every day, so that the ground and the trees were entirely covered with snow. I continued the base line west until October 25th, working whenever the weather permitted; on the 24th, over six inches of snow fell and froze in the creeks, so that on the 25th, we were unable to break through to Crooked Pine Lake.

As I had been unable to find any trace of the 7th meridian, with which I had to intersect, and as I had not been supplied with field notes showing the position of the 7th mile post thereon, I decided to postpone finishing this part of the line until after the freeze up, and started back for Height of Land Lake to finish the 3rd meridian. On the 27th and 28th I continued south but on the 28th I was compelled to postpone the work as the lakes were all covered with about six inches of snow ice, which, while practically unbreakable from a canoe would not carry a man's weight. I made a cache of my supplies and outfit and started for home, having to go by way of Off Lake to Barwick.

On December 2nd, I again started out and drove to Sabaskong Bay, where I completed the base line, returning to Clearwater Lake, I then completed the 3rd meridian, reaching Fort Frances on the 13th December.



## PLAN.

The plan of this work has been extended beyond the actual limits of the survey in order to show connections with the base and meridian lines previously run. The outlines of all lakes and streams have been shown with the connecting creeks and portages, and the outlines of all timber berths and mining locations of which I have record have been plotted.

## CONNECTION.

I have been unable to reach any definite conclusion as to where this base line should intersect the 7th, meridian.

Using Niven's chainages the lengths of the east and west boundaries are:—

East Boundary.	West Boundary.
24 miles on 6th meridian	East Boundary, Kingsford....6m.5c.59
1m.37c.93 connection	Richardson....6m.6c.50 to 6th m.
	6th m. post to 49th.....6m.9c.00
	49th to base .....7m.18c.41
25m.37c.93	25m.39c.50
i.e. base line 1c.57 too far north	

But Niven's 1st base having a latitude of  $48^{\circ} 45' 30''$  would be at a distance of 16m.55.83 south from the 49th, which would put the 24th mile post at a distance of 7m.24c.17 north of the 49th. The latitudes given on O.L.S. Niven's plans do not appear to be quite correct. Latitude of Carpenter base is given as  $48^{\circ} 44' 10''$ , by distance south of 49th, this should be  $48^{\circ} 44' 08.4''$ .

Latitude of first base is given as  $48^{\circ} 45' 30''$  by distance 1m.37c.93 north of Carpenter base this should be  $48^{\circ} 45' 25.2''$ .

Latitude of 2nd base at 24th mile is  $48^{\circ} 50' 42''$ , this gives a latitude for the 1st base, six miles south, of  $48^{\circ} 45' 29''$ .

Latitude of my base is  $49^{\circ} 06' 16.7''$  from which a line 24 miles south would have a latitude of  $48^{\circ} 45' 26.3''$ .

If the latitudes given for the Carpenter base and the 1st base are taken the distance on the connection line would be 1m.42c.62 in place of 1m.37c.93 as given by Mr. Niven. All of this seems to show that the latitude of Niven's 1st base at the 90th mile would agree very closely with that of a line 24 miles south of my base.

There is an excess in my chainage between the 6th and 7th meridians. Using Niven's chainages and following his base and meridian lines the distances are:—

South line, 6th meridian to Carpenter meridian .....	2851c.75
Divergence of meridians on 19m.40c.00, 1st base to Carpenter base .....	89
	2852c.64
Convergence of meridians on this distance across Carpenter .....	4c.95
	2847c.69
Carpenter meridian to 7th meridian .....	882c.93
	3730c.62
Convergence .....	20c.80
	3709c.82
Chained distance .....	3728c.71
Surplus ..	18c.89

In explanation of part of this excess I would point out that on working out the departures of the courses and distances given on the right of way plan of the Canadian Northern Railway there are surpluses found on two sections, viz:—

	Surplus.
Across lots 7 to 12, Halkirk .....	2c.81
Across Rainy Lake, from west boundary, Lot 36 Watten to I. R. line, thence west following I. R. lines to Carpenter base, this all being my own chainage .....	7c.91

Also that in every case where I have rechaind Niven's lines I have found excess, in the lines included in this plan these surpluses show:—

	Surplus.
South boundaries, Potts and Fleming .....	0c.86
South boundary, Dance and North boundary Miscampbell.....	0c.83
West boundary of Potts, between Niven's posts .....	1c75

### SOIL.

None of the land in the vicinity of these lines is of any value for agricultural purposes. The whole of the country is formed of rocky ridges with swamps, lakes and streams in the valleys between.

### TIMBER.

The accompanying timber plan shows that practically the whole of the area included has been burnt over. The probable dates of these fires has been determined from the apparent age of the second growth timber, and has been indicated on the plan. This second growth is nearly all jack pine, with poplar, birch and spruce, only in a few places is there any second growth of red or white pine, these places are also indicated on the plan. When these fires passed over the country most of the large pine escaped destruction; all of this has since been cut, with the exception of scattering trees far from water, so that there is now no merchantable timber left except between my 3rd meridian and the 7th meridian, where the spruce and cedar swamps escaped the fires, and which are yet of value for pulpwood and cedar poles and posts. The tamarac in all these swamps has been killed by the Larch Fly.

### MINERALS.

No work has been done for many years on any of the locations which are shown on the plan, nor is it possible to give any estimate of their value. That many of the veins carry gold and other minerals in what should be paying quantities is undoubted, but so far mining has not been successful. It is certain, however, that in the future there will be renewed activity in mining in this district. The only evidence of any activity in the vicinity of the lines is between Furlonge and Stonedam Lakes, where several mining claims have been staked out and assessment work done on deposits of copper and iron pyrites. North of the base line, on Schist Lake, there is a good showing of iron ore on which some test pits have been sunk. Transportation difficulties, however, render these claims of little value at the present time.

## SAMPLES.

Rock samples were taken at various points as indicated in the field notes. These have been forwarded to the Department of Lands and Forests.

I have the honour to be, Sir,

Your obedient servant,

(Sgd.) D. J. GILLON,

Ontario Land Surveyor,

*The Honourable, the Minister of Lands and Forests,  
Toronto, Ont.*

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*Appendix No. 26.*

TRAVERSE OF MISSINAIBI LAKE AND RIVER AND TRIBUTARY WATERS, DISTRICTS  
OF ALGOMA AND SUDBURY.

SAULT STE. MARIE, February 16th, 1920.

SIR,—Under instructions from you dated 8th May, 1919, to make survey of Dog, Crooked and Missinaibi Lakes, I commenced organizing for this survey on the 21st May. I left Sault Ste. Marie with complete outfit and four men for Missinaibi Station where I started survey of Dog Lake on 22nd May.

This survey has been carried out in strict accordance with instructions. From chained base lines a complete triangulation survey was carried out. Astronomic bearings were carried throughout and observations taken at intervals of not more than fifteen miles. Instrument and stadia rod were checked from time to time and continued in good adjustment. Stadia rod was used with two targets and readings taken by competent rodman and recorded carefully, and work checked and plotted every evening. Outlines of shores and islands were obtained by stadia readings from triangulation points on short traverses therefrom.

At intervals of about a mile apart along the shores of the lakes at conspicuous points, a tree was blazed and numbered, and where trees were not available, a post was planted—marked and well mounded with rock.

DOG LAKE REPORT.

On the westerly shore of Dog Lake the south boundary of Township Forty-seven, Range Twenty-seven was found, opened up and re-blazed and a new post planted and mounded with rock together with the old post. From the south-east angle of Township Forty-six, Range Twenty-seven, the line between Townships Forty-five and Forty-six was opened up and re-blazed westerly approximately two miles to the main line of the Canadian Pacific Railway. At the various points where the line intersected the shores of Dog Lake, posts were planted and mounded with rock. A bench mark painted on solid rock was established near lake shore at Missinaibi Station; to Canadian Pacific Railway datum. The area of Dog Lake is about twenty-two and five-tenth square miles and has approximately one hundred and fifty miles of shore line and seventy islands. (See schedule.)

For storage purposes the highest level that could be maintained is in my opinion dictated by the elevation of the Height of Land at the east end which is only about seven feet above water level shown on plan.

The Canadian Pacific Railway tracks are in general at about a constant elevation of twenty to twenty-five feet above lake level as observed during survey.

The outlet is narrow and downstream the river falls rapidly between solid rock banks and would give good opportunity for controlling dams. The capacity for storage is in general terms one hundred and sixty square mile feet.

The shores slope up so that water area at plane seven feet above stage at time of survey will show little increase in area. There are very few marshes or low spots.

Tributary creeks are few in number and with the exception of McMurtry Lake, the bodies of water tributary are all shown on plan. McMurtry Lake is said to be about six miles and might average a mile wide. It is connected to Dog Lake by a small river about twenty chains long with very little fall and it should be a good additional storage. The Loch Lomond River would not be flooded as there is a considerable fall near its entrance to Dog Lake.

A very small amount of timber would be affected by flooding. Almost the whole of Dog Lake territory has been visited by fire on three different occasions, namely: About the year 1890 the district was almost completely burned over, followed again by fires in the years 1905 and in 1915 the country around the easterly end of the lake was again swept by fire. Areas of mature timber still exist such as pulpwood and tie timber. The second growth timber from fire-swept country is principally poplar to six inches in diameter.

As a summer resort this lake has attractive possibilities being very easily reached by the Canadian Pacific Railway at Missinaibi Station. There are many first class camping places with excellent sand beaches and the second growth timber is of sufficient size to give an attractive appearance.

The waters of the lake abound with fish of various species such as pike, pickerel, trout, white fish and herring.

As a country for moose hunting this district has few superiors, bear also being plentiful.

#### CROOKED LAKE REPORT.

Crooked Lake in the District of Sudbury has an area of about one and eighty-three one-hundredths square miles and approximately thirty miles of shore line and twenty-three islands. The islands principally are contained within the middle third of the length of the lake. The shores generally rise with a gentle slope from the water's edge and in no place are precipitous. Lake bed and shores are in general sand and boulders and with occasional rock outcrop. Both ends of lake are very shallow with mud bottom so much so that paddling is difficult on account of limited depth of water. Lake throughout appears to have comparatively small depth. The shores are practically free from marshes so that a moderate amount of increase in stage of water would not greatly increase area. Height of Land is about seven feet above observed stage of Crooked Lake.

The timber as noted on plan consists mostly of second growth composed of jack pine, spruce, balsam, birch, poplar and cedar interspersed with patches of *brulé*.

Fish are fairly plentiful. Game comprises moose and bear principally, the latter especially being attracted by the plentiful supply of blueberries.



## MISSINAIBI LAKE REPORT.

On account of continued bad weather and approach of winter the traverse of this lake was not completed. About fifteen miles at the north-east end of the lake is yet unsurveyed.

The portion surveyed to date comprises a long and comparatively straight stretch of lake about twenty miles in length and averaging from one-quarter to three-quarter miles in width with a connecting course at mid-length northward from Fairy Point about one and one-half miles, and north-east from this about parallel to the remainder of the lake there is an arm about nine miles long and varying in width from one-quarter to three-quarter miles.

In general, the lake has a great depth and in no places were any shallow areas encountered. Navigation on any part of the lake would be possible for large tugs.

The shores of the lake are rocky and in many places precipitous. There are a few limited areas of marsh along the shores of the lake but flooding would not materially increase area.

Crooked Lake is a tributary to this lake entering it at the west end of the north-east arm above noted about three miles in an airline from Fairy Point. At the entrance to Missinaibi Lake there is a fall of fifteen feet high and upstream from this about three and one-half chains is a fall about fifteen feet high which is one and one-half chains from the outlet of Crooked Lake.

The lake has long been used by traders as a link to James Bay. It is very probable that this lake would make an excellent storage for power development on Missinaibi River but the outlet I have not yet examined.

Timber such as red and white pine are scarce, only a small amount of this species scattered throughout the lake district. Spruce and balsam interspersed with birch, poplar and cedar will be found in large quantities together with jack pine suitable for tie timber.

I have the honour to be, Sir,

Your obedient servant,

(Sgd.) C. R. KENNY,

Ontario Land Surveyor,

*The Honourable, the Minister of Lands and Forests,  
Toronto, Ont.*

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*Appendix No. 27.*

SURVEY OF CERTAIN TOWNSHIP OUTLINES IN THE DISTRICT OF ALGOMA.

SAULT STE. MARIE, ONT., December 10th, 1919.

SIR,—We have the honour to submit the following report on the survey of certain township outlines in the District of Algoma, made under instructions from the Minister of Lands and Forests, dated at Toronto, May 1st, 1919.

The survey party, under our Mr. Ross, left Sault Ste. Marie on June 5th, and proceeded to the west boundary of the Township of Wicksteed by way of the

Algoma Central and Canadian National Railways. Actual work was commenced on June 7th, and completed on August 21st. The party arrived back in Sault Ste. Marie on August 24th.

During the whole course of the work we only lost half a day on account of rain, but this dry weather was the cause of many forest fires. We were chased on to an island in a lake at the south-east corner of the Township of Lessard and held there for three days. It was then necessary to cut our way through burning country to avoid starving. We also had great difficulty with labour throughout the whole course of the work.

We first ran our 2nd base line west astronomically about ten miles, from the north-west corner of the Township of Wicksteed. We then ran north astronomically nine miles from the north-west corner of the Township of Wicksteed. From the nine mile post on this line we ran about ten miles west astronomically on our 3rd base line. From this point we backed up to the south-west corner of the Township of Wicksteed by way of Nagagami Lake. Obakagami River and the Canadian National Railway. From there we ran our 1st base line west astronomically twenty miles thirty-five chains and ten links, to O.L.S. Niven's boundary line. From the nine mile post on this line we ran north astronomically twenty-seven miles two chains and thirty-four links. The intersection with the 2nd base line pointed to a mistake in chainage and this was discovered on the 1st base line. A tally stake at eight miles seventy-seven chains was mistaken for the nine mile stake and the meridian was run from this point. Posts to the west on the 1st base line were not affected. An error of one chain in measuring the base lines of each of two triangles was made between the 9th and 18th mile of the meridian. This was corrected throughout and all posts moved to true positions and the notes corrected. When we intersected the 2nd base line with our meridian, this base line was produced west astronomically to the Algoma-Thunder Bay boundary, making it a total length of twenty miles thirty-one chains and eighteen links. The last line to be run was the production of the 3rd base line west astronomically to the boundary line. This line has a total length of twenty miles twenty-seven chains and eight links.

We came out to the railway along the boundary line and took the train to Sault Ste. Marie from the station at Lux. My second chainman informed me on our return that the distance on the north boundary of the Township of Foch between the north-east corner and the 1st mile post is seventy-nine chains and eighty-five links and between the first and second mile posts, eighty chains and fifteen links. The explanation is as follows. We had to swear in a new chainman for that day, and he, in spite of instructions, held at the end of the steel in place of the end of the brass handle. This error was corrected by the chainman in the next mile which is planted two miles from the corner but he did not correct the position of the first mile post and did not report the error.

#### GENERAL.

The territory covered might be divided into two parts by an imaginary line drawn about three miles south of the Canadian National Railway, and parallel to it. To the south of this line it is very rough and rocky, to the north it is a rolling, sandy, clay country.

#### SOIL.

The soil in the Townships of Flanders, Nagagami, Frances and Hiawatha is for the most part a sandy clay loam covered with black muck. There are

scattered areas of very gravelly clay of glacial origin. The valleys and low lying land in the Township of Lessard and Foch are arable but the total area of useful country from an agricultural point of view is very small. These townships are rock in the main.

#### TIMBER.

The Township of Lessard and the easterly nine miles of the Township of Foch are heavily timbered with large spruce, poplar and birch. Fire swept the southerly two miles of these townships during the summer of 1919. The westerly two miles of the Township of Foch has been swept clean by fire some twenty years ago and is still barren. The Townships of Nagagami, Flanders, Hiawatha and Frances are wooded with spruce from 3 in. to 8 in. in diameter, together with a certain amount of banksian pine near the Canadian National Railway. There is a very large burnt area in the neighbourhood of the line between the Townships of Nagagami and Flanders, Frances and Hiawatha.

#### MINERALS.

The rock formation is entirely Laurentian as it came under our observation, being granite and gneiss. We saw no indications of minerals.

#### WATER POWERS.

There is one fall on the Obakagami River about three miles south of the lake of that name, which would develop about 1,000 horse-power if full use were made of the storage capacity of Obakagami Lake. A thirty foot dam could be cheaply constructed between rock walls to have a crest of about one hundred feet. Aside from this, the rapids on the Obakagami and Nagagami Rivers are of no consequence from a power development point of view.

#### FISH AND GAME.

Practically all the rivers and streams in this area abound in speckled trout. There are as well, pickerel, pike, maskinonge, whitefish and suckers. We are unable to make a complete report as to fish as it would be necessary to use a net to get the information.

There are great numbers of moose and a few deer. There did not appear to be any rabbits and there were very few partridge.

We are sending under separate cover, field notes, plans and accounts in connection with our work.

We have the honour to be, Sir,

Your obedient servants,

(Sgd.) LANG & ROSS,

Ontario Land Surveyors.

*The Honourable, the Minister of Lands and Forests,  
Toronto, Ont.*

*Appendix No. 28.*TO RE-ESTABLISH PART OF THE BOUNDARY OF THE ALGONQUIN PROVINCIAL PARK,  
DISTRICT OF NIPISSING.

PEMBROKE, January 31st, 1920.

SIR,—Acting under your instructions of August 6th, 1919, I proceeded to Sligo, a camp on the Bonnechere River where it crosses the south boundary of the Township of Guthrie. I commenced work with a party of eight men on August 16th, 1919, and continued without interruption until December 12th, 1919.

During this time I retraced the south boundary of Guthrie from the north-west angle of Burns to the Township of Master; the south boundary of Master; the east boundaries of Master, Stratton and Bronson; the north boundary of Bronson; the east boundary of Edgar, across concessions eleven to sixteen inclusive; and the north boundary of the Township of Edgar; a total distance of sixty-six and a quarter miles.

All old posts found were renewed as instructed and iron bars placed at all township corners, excepting the south-west and north-west angles of McKay and the north-west corner of Edgar. The lines were well re-blazed and where timber was scarce posts were planted along the centre line of road allowances about ten chains apart and marked P.L. on the side facing the Algonquin Park, so as to facilitate following the line, especially in burnt parts.

I am enclosing in a parcel to your address, notes, plans and diary, with pay sheets, accounts, receipts and statements in triplicate, as required by your instructions.

I have the honour to be, Sir,

Your obedient servant,

(Sgd.) J. L. MORRIS,

Ontario Land Surveyor.

*The Honourable, the Minister of Lands and Forests,  
Toronto, Ont.*

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*Appendix No. 29.*SURVEY OF CERTAIN TOWNSHIP OUTLINES ON THE KAPUSKASING RIVER,  
DISTRICT OF ALGOMA.

OTTAWA, January 5th, 1920.

SIR,—In accordance with your instructions of May 1st, 1919, *re* the survey of certain township outlines along the Kapuskasing River in the District of Algoma, I have the honour to submit the following report.

I left Ottawa on the evening of June 10th, and after stopping in North Bay during the day of June 11th, arrived at Agate on the afternoon of June 12th.

The station here is within 150 feet of Kapuskasing Lake and we made our first camp on its shores. I had my provisions shipped by freight and my assist-



ant, who had gone on ahead, had everything in readiness, including our iron posts, and on the morning of June 13th we loaded our outfit into five canoes and started down the Kapuskasing River.

The river at this time of the year was reasonably high and made canoeing much more pleasant, as we were enabled to "run" several rapids that in lower water would require portaging. The longest portage we had was about one mile in length and was the second last one before we came to our work. On the stretch of river extending through our work there were no portages or rapids, our last one going in being at the south boundary of Allenby Township. We left part of our provisions on the south boundary of Allenby and took the remainder down to the old G. T. Railway cache near the north-west corner of Allenby Township and made camp right at this corner of this township.

On the morning of June 23rd, we started on the meridian between Oscar and Concohar Townships, after having observed on the line the previous evening. This line was for the most part heavily wooded and undulating, having good clay soil on the higher places, with a subsoil of clay in the wet and marshy places. On the morning of June 27th, we had quite a snowflurry and the same evening it froze quite hard, sufficient to form ice about one-quarter inch thick on our water pails. Owing to the fact that two of my men disappointed me and one of my chainmen being unable to come in until July 1st, I was obliged to send out for more men and my assistant went out to Kapuskasing Station returning with four men. We made a main camp at the north-west corner of Concohar Township, and from here worked out two and a half miles east to the Kapuskasing River, the land being generally high and undulating and for the most part heavily wooded with large timber. Then we ran west on the line between Oscar and Bourinot Townships. While this land was undulating there was more low land as we got farther away from the river. In the fifth and sixth miles of this line, we encountered some good cedar up to fifteen and eighteen inches in diameter. The last quarter of a mile was through very open, small second growth poplar on a sandy loam. No bearing trees were marked here, as there was nothing large enough to be of use for this purpose. No trace was found of the westerly boundary of the township having been run yet, so we produced our lines six chains beyond the nine mile post, and returned to the easterly boundary of the township.

We then ran north on the meridian between Bourinot and Shanly Townships. The first couple of miles of this line was mostly through heavy timber with thick underbrush. From the second to the fifth mile was good pulpwood, mostly poplar, and the best we encountered anywhere on the line, while from the fifth to the ninth miles the land was higher and had been burnt over at some previous period. There is considerable second growth and windfall in this area. The nine mile post was planted on a rocky ridge, or outcrop of Keewatin. O.L.S. Code's line had not been run yet, so we proceeded on our line six chains past the nine mile post. On this line we encountered two lakes, as shown on the plan, and one day we canoed up to work following the stream from our camp near the four mile post, to our line on the north shore of the lake. We also utilized this stream for moving camp out to the Kapuskasing, and down to the south boundary of Allenby.

From here we packed east taking the provisions from our cache to the south-east corner of Allenby Township, and proceeded to run the meridian between Allenby and Seaton Townships. When we arrived at this corner we found that

Sutcliffe and Neelands had run their line out to this point a few days previous. We ran the line to the north-east corner of Concohar Township and then we turned to our nine mile post, and ran west to the Kapuskasing River, and the westerly boundary of the Township of Concohar.

On these latter lines the country for the most part was low and wet with open tamarac swamp or a thick growth of spruce, tamarac and balsam. Towards the north-easterly corner of Concohar Township, we encountered low ridges or knolls of clay or sandy clay loam, with some heavy timber thereon.

We reached the Kapuskasing and on August 4th, I left my assistant to run west on the Maude, Oscar Chord, while I went out to Kapuskasing to arrange for the disbanding of the party at the completion of the work.

I took one of my chainmen out with me as he had a poisoned hand and needed medical attention. This coupled with the fact that a couple of weeks previous I had to send out one of my Indians, necessitated my bringing in more men. So I returned with two men and a boy along with some provisions, to complete the work.

On reaching the nine mile post on the Maude, Oscar Chord, we were unable to locate Speight's line, run in 1909. We spread out and though we made a thorough search, we were unable to locate it, possibly because there was a heavy undergrowth of alder, and as the west boundary of Oscar Township had not been run yet. So we produced our line seven chains past the nine mile post, and returned to camp.

We then continued to run east on the chord, between Shanly and Concohar. When about four and one-half miles of this line had been completed one of our Indians, who had previously been troubled with appendicitis, was threatened with a recurrence and had to go out. Two others who for some time past had been anxious to go bear hunting, decided to leave and could not be persuaded to stay. This left me short of men and as I had only enough provisions to finish the job working with a complete party, I decided to run only as far as the south-east corner of Shanly Township, and then return. This we did, and continuing on down the Kapuskasing River arrived at the station of the same name, on the Canadian Government Railway, on August the 18th.

The river was quite shallow in a great many places coming out, and it was with difficulty we were enabled to get through. At Kapuskasing I paid off my men and arrived in Ottawa, on August the 20th.

The country through which we worked was for the most part comparatively low, the land and timber on the west side of the river being much superior to that on the east. On the latter side, it was practically level throughout, being covered with open tamarac, in places, while in others a thick growth of tamarac, spruce and balsam, interspersed with thick alder undergrowth.

However, on the easterly boundary of Concohar, we encountered some larger timber, e.g., balm of gilead, birch, and spruce, etc., as the ground here appeared to rise slightly, being very gently undulating.

On this side of the river, the soil was clay, or moss, with a clay subsoil, with a few sandy knolls.

On the west side of the river, the country for the most part is undulating and is quite heavily timbered. The timber on the higher lands is quite large, from six to eighteen inches in diameter, or even larger in some cases, and is of a good quality, birch, spruce, balsam, poplar, balm of gilead and cedar, while the valleys are tamarac, spruce and balsam, or alders.

When running west on the chord between Oscar and Bourinot Townships, we encountered some really good cedar, which has every indication of extending for a considerable distance north and south of the line.

The burnt area encountered apparently embraces the north-westerly corner of Bourinot Township as shown on the accompanying timber plan. The land apparently rises towards the end of the township and the nine mile post on the Bourinot. Shanly meridian is on an outcrop of Keewatin.

We encountered no economic minerals whatever, there being only a few scattered boulders or low rocky ridges on the Oscar, Bourinot Chord, the Bourinot, Shanly meridian and the Oscar-Maude Chord.

The land on the west side of the river is generally speaking good clay soil on the higher elevations, with a clay subsoil in the lower and wet places.

The game in this part of the country is plentiful, there being abundance of moose, bear, beaver and ducks.

At certain places no iron posts were planted as shown in the field notes attached hereto, as I had none at my disposal, having used the number sent me for this work.

Astronomic observations were taken whenever weather conditions would permit, the work throughout being carried on under my personal supervision and the foregoing report is respectfully submitted.

I have the honour to be, Sir,

Your obedient servant,

(Sgd.) N. B. MacROSTIE,

Ontario Land Surveyor.

*The Honourable, the Minister of Lands and Forests,  
Toronto, Ont.*

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*Appendix No. 30.*

TO SUBDIVIDE THE TOWNSHIP OF FOWLER, DISTRICT OF THUNDER BAY.

PORT ARTHUR, January 12th, 1920.

SIR,—We beg to report that in accordance with instructions issued from your Department dated April 15th, 1919, we have completed the survey of the Township of Fowler, in the District of Thunder Bay.

This township is bounded on the south by the Township of Ware, on the east by the Township of Jacques, on the west by the Township of Forbes and the Grand Trunk Pacific Block No. 1, and on the north by Dog Lake and the unsurveyed lands of the Crown.

The south-east corner of this township is about twenty-one miles north-west from the City of Port Arthur. The road from Port Arthur is well graded and gravelled to within a mile of the south-east corner of the Township.



The survey was commenced at the south-west angle of the Township of Jacques. From this point a mile was measured on the west boundary of Jacques and from here the line between concessions one and two was run west astronomically to the west boundary of the township. On this line posts were planted at intervals of 40.00 chains to mark the corners of lots fronting thereon. From the end of each mile on this concession line the sidelines between lots two and three, four and five, and so on were run south astronomically to intersect the northerly boundary of the Township of Ware and also north astronomically to the north boundary of the township. On the side line between lots two and three, the widths of concessions two, three, four and five were laid off, each being made 80.00 chains and from these points the concession lines were run east to intersect the westerly boundary of the Township of Jacques. The lines between concessions two and three and concessions three and four were then run west astronomically to the west boundary of the township and the lines between concessions four and five and between concessions five and six were run west astronomically to intersect the high water line of Dog Lake. The north boundary of the township was run west astronomically from the north-west angle of the Township of Jacques to Dog Lake. As the line between concessions one and two which was used as a base to lay off the widths of the various lots does not run across the full twelve miles, the line in front of concession four was used as a base to lay off the widths of lots nineteen, twenty, twenty-one and twenty-two, each of which was given 40.00 chains. The width of lot twenty-three was established by taking the distance below the westerly limit of lot twenty-two, as established above, and a line run by O.L.S. Fawcett, in 1907, as a trial line for the east boundary of Grand Trunk Pacific Block No. 1, the distance being 43.95 chains. The width of this lot in concession five and six was also made this distance. From the lot corners established, the side lines between lots twenty and twenty-one and between lots twenty-two and twenty-three were run south astronomically to the south boundary of the township and north astronomically to the north boundary of the township. On the line between lots twenty and twenty-one the depth of concession four was made 79.76 chains and from here the line in front of concession five was run west astronomically to the west boundary of the township. On the line between lots twenty-two and twenty-three the depths of concessions five and six were made 79.80 chains and 79.50 chains respectively and from the points so established lines were run west astronomically to the west boundary of the township and the north boundary was run east astronomically to Dog Lake. It was noted that in running the north boundary east to the lake, that the line produced coincided exactly with that portion of the north boundary of the township east of Dog Lake.

On several concession lines the widths of the odd numbered lots, with the exception of lot twenty-three, were made 40.00 chains. The width of lot twenty-three was established as explained above, the width being 43.95 chains. The widths of the even numbered lots were established by the intersection of the side lines with the concession boundaries. The south boundary of the township was re-chained and lot corners were established thereon.

Substantial wooden posts of size and timber specified were planted to mark the angles of the lots. Bearing trees were marked and their position noted where timber was available. As in many places all the timber had been burned off many posts have no bearing trees. In most of these cases the posts were well mounded with stones. Iron posts were marked and planted at the points indicated on the projected plan accompanying your instructions.



In the case of the posts at the following corners: Lots nineteen and twenty, concession two, lots five and six, concession three, lots seven and eight, concession four, lots five and six, concession five, and lots twenty-one and twenty-two, concession six, as these corners fell in bodies of water, posts were planted on the north shore of the bodies of water, in which they fell at points bearing north astronomically from their proper positions on the concession lines and the distances were measured from the concession lines and noted in the field notes. A post was planted on the easterly shore of One Island Lake to indicate the position of the line between lots five and six, concession two, as this line is almost entirely in the lake. Lot fifteen, concession four, on the north side of Hawk Bay is made to include the portion of what would be lot sixteen to the west of it. The easterly boundary of lot twenty-two, concession three, was made the Dog River.

A road allowance one chain in width was laid off around Dog Lake and Little Dog Lake and along both sides of the Dog River. Posts to mark the corners of lots fronting on the lakes or in cases where an intersection was in the lake, were planted at the perpendicular distance of one chain from the high water line. On Dog Lake witness posts were planted in front of these and the surrounding trees, where there were any, were well blazed.

The lines were well opened up and blazed. Observations were taken frequently and will be found recorded in the field notes. The magnetic variation remained fairly constant at two degrees east but in places this was found to vary to a considerable extent.

A stadia traverse was made of all bodies of water in the township and field notes prepared of same on the scale of ten chains to an inch. On Dog Lake the position of the original shore line is shown as nearly as it is possible to do without taking soundings. This is shown as a dotted line in the field notes.

#### TIMBER.

A timber plan of the township accompanies this report. Over half of the timber has been destroyed by forest fires at different times. That portion of the township east of One Island Lake is now grown up with jack pine, poplar and birch about twenty-five to thirty years old. In cases where fire has passed over in recent years the only timber of value now left is the spruce in the swamps. Of the timber not destroyed by fires nearly all of value has been cut. In the last year there have been four lumber camps operating within the township and by the coming spring only small patches of good timber will be left. Fires occurred in two places during the progress of the survey. One of these was west of One Island Lake and the other was south and west of Dog Lake in concessions three and four. Neither of these fires was started by any members of our party. Another fire has passed over a small area along the Dog River in lots twenty-three and twenty-four in concessions five and six, since the lines were run. None of these did any material damage.

#### SOIL.

The southerly three concessions of the township are fairly good agricultural lands, there being between fifty per cent. and sixty per cent. good soil. This ranges from clay loam in the central portions to sandy loam on the easterly and westerly ends of the concessions. In the burned over area south of Dog Lake in concessions three and four, nearly all the timber is gone and this land

could be cleared and made ready for crops in a very short time. It would make excellent grazing and hay lands. The northerly three concessions are very rough and broken and the soil is very stony and rocky, there being scarcely twenty per cent. of the land suitable for farming in these concessions. We do not think that it would be advisable to open these concessions for settlement at this time, though consider that the southerly three should be opened up.

#### MINERALS.

There are numerous outcroppings of rock in the township, especially in the northern part of the east half, but no minerals of any value were noticed. The south-easterly part of the township has at one time been very thoroughly investigated for iron though none was found. There is a considerable overburden in most places.

#### TOPOGRAPHY.

The hills surrounding Hawk Lake and Dog Lake are from one hundred to two hundred feet in height with tops inland from ten chains to twenty chains. The northerly three concessions east of Dog Lake are rough and broken by hills from fifty to a hundred feet in height. The southerly three concessions are fairly level through lots one to fourteen. West of lot fourteen to Little Dog Lake and the Dog River in concessions one and two is very rough. A fairly level plateau is found in lots fifteen to twenty in concession three and this also extends into lots twenty and twenty-one in concession four.

#### LAKES AND RIVERS.

Several small lakes, not previously mapped, were found. The largest bodies of water in the township are Dog Lake, Hawk Lake and One Island Lake. The water in these is clear while that in some of the smaller lakes is of a dark colour. On Dog Lake the natural beauty of the lake has been destroyed by flooding. One Island Lake and the lakes to the east of it would make very desirable lakes for summer camping. The easterly part of the township nearly all drains directly or indirectly into Hawk Bay of Dog Lake. The source of Strawberry Creek is in the large swamp in lots nine, ten and eleven in concessions one and two. This flows south through the Township of Ware into the Kaministiquia River. Concessions one, two and three in lots thirteen to twenty are drained by three creeks into Little Dog Lake and the Dog River. In the returns of the survey of the Township of Jacques made by us One Island Lake as shown therein was improperly named. Since that time we have found that the lake generally known as "One Island" is that shown on the plan of Fowler Township. Storage dams have been built at the outlets of Hawk Lake, One Island Lake, and the small lake in lot ten, concession six. These are used to supply water to drive the creeks flowing out of them. The head in each case is about three feet.

Dog River is not navigable above Little Dog Lake. From here there is a portage and tote road to Dog Lake, a distance of about a mile and three-quarters. The outlet of Hawk Lake can be run with a canoe in high water and the inlet of Spike Lake is always navigable for canoes. The outlet of the small lake in lot ten, concession six is now being improved for driving purposes.

## ISLANDS.

Fifty-seven islands were found within the township. These were lettered and numbered from J.K. 20 to J.K. 76. J.K. 20 is in Little Dog Lake, J.K. 21 to 51 are in Dog River. J.K. 52 and 53 and J.K. 55 to 71 are in Dog Lake. J.K. 54 is in Florence Lake, J.K. 72 is in Bolduc Lake, J.K. 73 is in Kawene Lake. J.K. 74 is in Freed Lake. J.K. 75 is in Spike Lake and J.K. 76 is in One Island Lake. The areas of the islands are shown on the plan of the township. Many of them are very small, especially those in the Dog River. Several of the islands in Dog Lake have been formed by raising the level of the lake.

## ROUTES, ETC.

From Trout Lake, which is one mile south of the south-east angle of the township a tote road runs north-westerly to the south bay of One Island Lake. This road has been used for the last two winters for freighting in provisions and is also passable for waggons but will require considerable more improvement before it is fit for regular summer use. A winter road runs from the south-easterly corner of lot six, concession two, to connect with the road system in Ware Township. From the southerly boundary of the Township to Kaministikwia via this road is about twelve miles. Another road runs north from Kaministikwia along the Dog River to Little Dog Lake. This road is not improved for the two miles south of the township. In the township this road follows Little Dog Lake to the north end and here it branches and runs to Dog Lake. The portion between Little Dog Lake and Dog Lake can be used as a wagon road but the remaining part is too rough. A winter road branches off this road and runs across concession eight of Ware and enters Fowler in lot sixteen. It then swings east and north and is cut out to Hawk Bay. There is also a winter road running across One Island Lake to Hawk Bay, and on through lot eight in concession four, five and six to Dog Lake. A good trail that has once been used as a road runs from the north end of the portage from Little Dog Lake to Dog Lake to the dams at the outlet of the lake. Numerous tie roads were found in the neighbourhood of the small lakes in lots six, seven and eight in concessions five and six also in lots five and six in concessions one and two and in lots thirteen and fourteen in concessions one, two and three.

## CLEARINGS, IMPROVEMENTS, ETC.

There are several sets of lumber camps in the township. These are in lot six, concession two (J. C. Greer), lot eight, concession five (J. Stirrett & Sons), lot seven, concession six (J. Stirrett & Sons) and in lots fourteen and fifteen, concession one (Jas. Hourigan & Co.). No other improvements than the buildings were made around any of these camps. Two trappers' cabins were seen on One Island Lake. There is also a full set of camps in lot twenty-three, concession five. These were used by the contractors when the storage dams were being built but are now in poor condition. No squatters were found and no other improvements noted.

## WATER POWERS, ETC.

The fall between Dog Lake and Little Dog Lake is about three hundred feet. Many rapids and falls were found along the course of the river. Detailed

investigations of these have been made by the Hydro-Electric Power Commission in 1913 and previously and more definite information than we can furnish could be obtained from them.

Very few indications of game were noticed as the country has been hunted and trapped over for many years. The lakes are not well stocked with fish though some lake trout were caught in Hawk Lake. It might be advisable to stock One Island, Florence and Hawk Lakes with trout as they could be made very attractive grounds for fishing.

We have the honour to be, Sir,

Your obedient servants,

(Sgd.) PHILLIPS & BENNER,  
PER J. K. BENNER,

Ontario Land Surveyors.

*The Honourable, the Minister of Lands and Forests,  
Toronto, Ont.*

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*Appendix No. 31.*

**SURVEY OF A MERIDIAN LINE AND TRAVERSE OF THAT PORTION OF DOG LAKE  
LYING NORTH OF THE TOWNSHIP OF FOWLER, DISTRICT OF THUNDER BAY.**

PORT ARTHUR, ONT., April 30th, 1920.

SIR,—We beg to report that in accordance with instructions issued from your Department dated September 30th, 1919, we have completed the survey of that portion of Dog Lake lying north of the Township of Fowler, in the District of Thunder Bay, and a meridian line across same.

The traverse of Dog Lake was carried on in the winter months but a portion of the meridian was run in October last.

This lake is about thirty miles north-west of the City of Port Arthur. The route to it is via Dawson Road, thence along the boundary line between the Townships of Ware and Gorham to Trout Lake, thence north-westerly along a tote road to One Island Lake and then by canoe through One Island Lake and Hawk Lake. There is a winter road through Fowler Township to the bay of Dog Lake which enters lots nine and ten, concession six.

The survey of the meridian was commenced at the north-west corner of lot twelve, concession six, Township of Fowler, and from this point a meridian was run north astronomically across the various points of land and bays to the last intersection with the northerly margin of the lake. This line was all chained in the winter and posted according to instructions.

The traverse of the lake was commenced at the intersection of the north boundary of the Township of Fowler with the high water mark in lot thirteen, concession six, Township of Fowler. Trees were marked at intervals of about one mile the numbers running from one to seventy-five. Eighty-two islands were



found and surveyed within the portion of the lake covered by this report. These were lettered and numbered from J.K. 77 to J.K. 158 and on each island a tree was marked with the initials and numbers of the island and these will be found recorded in the field notes of the survey. The traverse of the shore line was made with reference to the margin as defined when the dam of the Kaministiquia Power Co. at the outlet of the lake is full. At the time the survey was made the lake was nearly at its original level and the approximate position of the old shore line as shown in dotted lines on the plan should be fairly accurate.

The greater portion of the margin of the lake is timbered with green forest, the most prevalent species being spruce. The west shore has been all burned off by forest fires that passed over the country about ten years ago. Lumbering operations are being carried on by John Stirrett and Sons on Timber Berth D. and their camp is near Station 26 of the traverse.

Few indications of game were noticed. The lake is poorly stocked with fish.

We have the honour to be, Sir,

Your obedient servants,

(Sgd.) PHILLIPS & BENNER,

Ontario Land Surveyors.

*The Honourable, the Minister of Lands and Forests,  
Toronto, Ont.*

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*Appendix No. 32.*

TRAVERSE OF LONG LAKE, DISTRICT OF THUNDER BAY.

SAULT STE. MARIE, March 17th, 1920.

SIR,—I beg to submit herewith the following report in connection with the traverse survey of Long Lake, made by me in the District of Thunder Bay, under instructions from your Department, dated July 22nd, 1919.

On receipt of these instructions preparations were immediately made. My assistants were brought from the Garden River Indian Reserve and the party left Sault Ste. Marie on the morning of July 30th, by the Algoma Central Railway via Oba arriving at Long Lake at midnight July 31st.

We commenced our survey from a post planted on the north boundary of the Long Lake Indian Reserve No. 77, surveyed by O.L.S. Dobie in 1910. We traversed the Canadian Northern Railway from this post, which was marked Post No. 1, to the north shore of Long Lake near the mouth of the Kenogami River. From here the stadia traverse of the lake was commenced, readings being taken at frequent intervals to show the irregularities of the shore line.

At intervals of about a mile apart posts were made and carved on the side next the lake. These were generally made from standing trees and were marked with a knife as follows: T.1, T.2, etc., up to T.85. In every case these posts were carefully tied to transit points with transit and a chain as shown on the plan prepared of this survey.

## ISLANDS.

All islands in the lake were located and traversed and marked by a square wooden post in a prominent place on the island. These posts were made where possible from standing trees and were carved with the letters G.L. 1, G.L. 2, up to G.L. 65, there being sixty-five islands in the lake ranging from a quarter of an acre up to 280 acres. The total water area of the lake was forty-nine square miles.

## TIMBER.

The timber along the shores of the lake is generally small and is not of value except as pulpwood. Spruce of fair size is found scattered along the shore. Thick growths of jack pine are numerous especially at the south end of the lake, where there are large stretches of sand and gravel. Poplar, balm of gilead, birch and balsam are also quite common. Cedar occurs in a number of places along the shore.

## GEOLOGY.

The rock outcrops for the north eight miles of Long Lake are granite. A contact between this rock and the Keewatin occurs at the narrows about eight or nine miles south of the north end of the lake. From this point the rock is mostly a dark coloured mica schist extending for about ten or eleven miles. South of these schist outcrops granite occurs again. The south stretch of the lake, however, is heavily covered with sand and gravel. White quartz veins are frequently seen in the schist outcrops, these carry no economic value, according to samples taken by us which were afterwards assayed. The highest assay shown from our samples was \$1.20 per ton in gold.

## TOPOGRAPHY.

The southern end of Long Lake is very rugged and mountainous. At one place a sheer rise from the water occurs of 360 feet. The contour of the country, however, gradually decreases toward the north, where it is quite low. This part of the lake is drift covered and the clay land is utilized for farming purposes. Only a very small area, however, is suitable for cultivation, this occurring at the extreme northern end of the lake.

## GAME AND FISH.

Moose and caribou are quite plentiful around Long Lake and fur-bearing animals appear to be numerous, especially beaver. This lake is a splendid one for fish, lake trout, pickerel, pike and whitefish are all plentiful. Some of the small creeks flowing into the lake abound with brook trout.

## GENERAL REMARKS.

Long Lake is a remarkably fine lake for summer resort purposes. Good water, navigable for the full length of fifty-one miles, very easy of access, Long Lake Station on the Canadian Northern Railway being situated on the shore of the lake. Three stores are doing business here. Two of these were built in the year of 1919 and the Hudson's Bay Company post, which is about two miles from the station, has been in existence for over 100 years. The water

elevation of Long Lake is 1,013 feet above sea level and the railway grade has an elevation of 1,031 feet.

The field work on Long Lake was completed on October 2nd, and the party arrived in Sault Ste. Marie on October 4th, where they were paid off and disbanded.

Accompanying this report is a plan on a scale of twenty chains to the inch, a list of the islands showing their area, etc.

I have the honour to be, Sir,

Your obedient servant,

(Sgd.) G. L. RAMSEY,

Ontario Land Surveyor.

*The Honourable, the Minister of Lands and Forests,  
Toronto, Ont.*

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*Appendix No. 33.*

TO SUBDIVIDE THE RESIDUE OF THE TOWNSHIP OF HANLAN, DISTRICT OF ALGOMA.

BRACEBRIDGE, November 20th, 1919.

SIR,—Pursuant to your instructions dated the 15th April, 1919, I have surveyed the residue of the Township of Hanlan, consisting of the ninth to twelfth concessions, inclusive, similarly to the Township of Casgrain, that is the posting of the ninth concession, this line having been run by O.L.S. Angus, 1912, and the re-chaining and posting of Speight's base line, the front of the twelfth concession run in 1907, also the lakes Pushimi, Hanlan, Wolverine and Pivabiska, also the parts of these lakes in the Township of Bannerman.

After completing the survey of the residue of the Township of Casgrain on the 3rd of September, 1919, I proceeded immediately to the adjoining Township of Hanlan. The concession line between the tenth and eleventh concessions was run east and west astronomically from the side line between lots twelve and thirteen.

The survey of the remaining lines was performed similarly to those in the Township of Casgrain, except that the side line between lots six and seven is the east limit of the road allowance, following Angus' survey, 1912.

The lakes were surveyed by stadia traverse and ties were made to the intersecting concession and side lines.

A basic triangulation was made of the larger expanses of water. Iron posts were planted at the intersection of the surveyed lines as shown in the field notes.

GENERAL FEATURES.

This part of the township is broken very largely by lakes, so much so that there are very few full lots in the concessions. The country is throughout these concessions, fairly high compared with the general run of land in this section. It is covered chiefly with spruce, poplar, and birch, here and there, there are small muskegs or swamps.

## SOIL.

The subsoil throughout is heavy clay covered on the high land with six inches of humus and on the lower land with from two feet to six feet of moss.

Generally speaking, there are few outcroppings of rocks except on the shores of the lakes.

## TIMBER.

Spruce may be said to be the prevalent kind though there is very considerable poplar. Spruce ranges from three to ten inches in diameter. The poplar averages from three to eight inches. There are also birch, balsam and tamarac.

## MINERALS.

Except on the shores of the lakes which are for the most part rocky, there are few outcroppings of rock, and I submit herewith a sample which appears to be general throughout the township. Sample was taken at the intersection of the side lines between lots eighteen and nineteen.

There is no indication of any minerals. The rocks are igneous chiefly in the form of granite.

## FISH AND GAME.

The lakes abound with fish, chiefly pickerel and pike. These have been caught up to twenty-five pounds. The game is plentiful. Moose abound in these regions. There are few bear, no deer. On the lakes there are generally ducks in large numbers.

## LAKES AND RIVERS.

The lakes form a considerable extent of these four concessions, and are connected as shown on the traverse plans.

In Pivabiska Lake there are numerous islands.

The shores of the lakes may be said to be very rocky and vary in height from ten to forty feet.

There is a river flowing north-easterly into the junction of Hanlan and Wolverine Lakes, which I deemed it advisable to survey. It averages  $1\frac{1}{2}$  chains in width almost up to the eighth concession.

The survey was completed on October 15th, 1919, and the party discharged at Hearst on October 16th, 1919. It rained almost every day and this, together with the existing conditions of labour, I experienced great difficulty in keeping men.

I have the honour to be, Sir,

Your obedient servant,

(Sgd.) W. A. SIBBETT,

Ontario Land Surveyor.

*The Honourable, the Minister of Lands and Forests,  
Toronto, Ontario.*



*Appendix No. 34.*

TO SUBDIVIDE THE RESIDUE OF THE TOWNSHIP OF CASGRAIN, DISTRICT OF ALGOMA.

BRACEBRIDGE, November 20th, 1919.

SIR,—Pursuant to your instructions dated the 15th April, 1919, I have surveyed the residue of the Township of Casgrain, that is the ninth to twelfth concessions inclusive, Pivabiska Lake and the Mattawishkwhia River, and beg to report as follows:—

I organized my party consisting of myself, two chainers, picket men, three axe men and a cook, at North Bay on the 29th July, 1919, and proceeded to Hearst, arriving there on the 31st, reaching the easterly limit of the ninth concession of Casgrain, by the Mattawishkwhia River on August 2nd, where I commenced my survey, which consisted of posting the front of the ninth concession (the line between the eighth and ninth concessions having been previously run by Coltham and Coltham, 1912) and running the line between the tenth and eleventh concessions, and the side lines between lots six and seven, twelve and thirteen, eighteen and nineteen, twenty-four and twenty-five north from the eighth concession, and the re-chaining and posting of Speight's base line, the north boundary of the township.

I found the north boundary, this line which had been run twelve years ago in a very bad shape through the entire township, owing to it being grown up with tag alders. I also surveyed the Mattawishkwhia River, Pivabiska Lakes and three other small lakes, as shown on the accompanying plan. Iron posts were planted at the intersection of the surveyed lines as shown in the field notes.

#### GENERAL FEATURES.

The four concessions of the township might be said to be chiefly muskeg covered, as usual, with small spruce and tamarac ranging from three to eight inches. Considerable portion of the higher land as shown on the plan has been burnt over, I should say, about thirty years ago, and is now covered with second growth of poplar and birch. West of Pivabiska Lake the land is somewhat higher than the general run, is slightly undulating, covered with poplar and birch.

#### SOIL.

The subsoil throughout is heavy clay, covered on the muskeg with anywhere from two to six feet of moss, on the burnt areas with a few inches of humus. There is very little rock in evidence.

#### TIMBER.

The general run of timber is spruce in the muskegs together with some balsam and tamarac. The diameter ranges from three to eight inches. The higher land has poplar and birch as shown on the accompanying timber plan.

#### MINERALS.

As stated there are few outcroppings of rock and I submit herewith, a sample which appears to be general throughout the township. The shores of Pivabiska

Lake are to a large extent rocky and the sample was taken from near the intersection of this lake by the tenth and eleventh concessions. There are no indications of any minerals, the rocks are igneous and chiefly a form of granite.

#### FISH AND GAME.

The large lakes and rivers abound with fish, chiefly pickerel and pike. The game is plentiful, moose abound in these regions. There are few bear, no deer. On the small lakes there are ducks in large numbers.

#### LAKES AND RIVERS.

Pivabiska Lake extends into the township through a narrows forming an expansion known as Bennet's Bay. The shores of the lake are rocky, the land rises anywhere from ten to fifteen feet around them. It is comparatively shallow, averaging fifteen feet deep. There are quite a number of shallow places and shoals of rocky boulders, which make it dangerous for navigation.

The Mattawishkhwia River averages from two and a half to three chains wide. The banks are not high and are earthy and soft. The river is shallow and below the eighth concession to the east boundary of the township there are considerable rapids which hinder navigation at low water though the fall at each is not much.

The river is navigable for good-sized canoes, heavily loaded, any place during high water.

The survey was completed on September 3rd, 1919, and the party proceeded to the Township of Hanlan, adjoining on the west.

I have the honour to be, Sir,

Your obedient servant,

(Sgd.) W. A. SIBBETT,

Ontario Land Surveyor.

*The Honourable, the Minister of Lands and Forests,  
Toronto, Ontario.*

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#### *Appendix No. 35.*

SURVEY OF THE OUTLINES OF THE TOWNSHIPS OF MACVICAR, CARMICHAEL,  
STRINGER, FORD, HICKS, OKE, POULETT AND AITKEN, DISTRICT OF  
TIMISKAMING.

NEW LISKEARD, ONT., August 3rd, 1920.

SIR,—Under instructions from the Director of Surveys, dated May 12th, 1920, our Mr. Sutcliffe proceeded to Kakatush, which is at the Ground Hog River crossing of the old Canadian Northern Railway, on June 8th, and personally conducted the survey up to the time of its completion on July 12th. We went down the Ground Hog River about fifteen miles to the first portage across to

the Nat River to which we crossed and followed to approximately the commencement point of our work.

No serious obstacles were met with either on the journey in or during the work. Stellar observations were taken at the different points indicated in our field notes. The nine mile chords are not shown as east and west astronomically at all points on the chord, but the true astronomic bearings have been calculated and noted in the field notes. The work was followed out in the order outlined in the instructions, and in all cases we satisfactorily checked in with previous surveys on the east and west sides.

#### INSTRUMENT WORK.

Light Mountain Gurley transits were used on the work and Stellar observations were taken as often as possible. These observations were facilitated by the use of curves previously plotted in our office for the proper latitude and longitude of the work, a copy of which is enclosed with the field notes. Correction for time was made by observation several times.

#### CHAINAGE.

Chains four hundred links long were used and slope distances were taken when necessary and corrected with the use of a clinometer and slope tables. The tapes were properly tested and the chainers were duly sworn.

#### POSTS AND BEARING TREES.

The most durable wood obtainable was selected for posts. We found the new type of iron posts fairly satisfactory where the ground was suitable, but we had a few instances where it was impossible to even place witness posts and mounds within reasonable distances from the points they were intended to witness. When possible, small trees were marked for bearing trees. The trees were chosen as nearly opposite one another as possible.

#### BLAZING OF LINES.

The picket man was held responsible for the blazing and the results obtained were satisfactory.

#### TIMBER.

With the exception of the Townships of MacVicar and Carmichael, the country was almost entirely covered by spruce bush with some balsam mixed through in places. Several muskegs were encountered, some of which were of considerable size. The north-west part of the Township of Poulett and the south-west part of Hicks is *brulé* about thirty years old. In the vicinity of the streams the *brulé* is covered by second growth poplar, whereas further back small spruce and alders have grown up. With the exception of the above mentioned townships the spruce timber is mostly small and suitable only for pulpwood, although along the south boundary of MacVicar some very good spruce was seen.

In the two above mentioned townships, particularly in the vicinity of the Ground Hog River, considerable very large poplar was encountered. It was sound and of good quality. In this same area the spruce is also large. Balsam is plentiful and some birch was seen, but generally speaking, there is very little birch in this section. No pine of any description was seen. It was only along the south and east boundaries of MacVicar, the south boundary of Carmichael and along the Ground Hog River, north of the head of the Long Rapids, that we saw timber of any real importance.

#### WATER COURSES.

The Ground Hog and Nat Rivers were the only streams of importance. There are a few small creeks but surprisingly few. The country as a whole is very level. It was only in the immediate vicinity of the above mentioned rivers that there were any hills of consequence. It was only on the south boundary of Oke that any lakes were seen.

#### ROCK FORMATION.

Only along the rivers in the vicinity of rapids was any rock seen.

#### AGRICULTURE.

The soil is almost entirely a good clay but will require extensive drainage to be of use for farming.

#### ANIMAL LIFE.

Moose are very plentiful. Fur-bearing animals are also very numerous. The principal fish in the Ground Hog River are sturgeon, pickerel and pike, all of which are fairly plentiful.

#### WATER POWERS.

The only water power of importance is that surveyed by us in 1911 as W.P. 9, report of which was filed by us at that time.

Accompanying this report are a general plan on mounted paper, a timber plan on tracing linen and the usual field notes.

We have the honour to be, Sir,

Your obedient servants,

(Sgd.) SUTCLIFFE & NEELANDS,

Ontario Land Surveyors.

*The Honourable, the Minister of Lands and Forests,  
Toronto, Ontario.*



*Appendix No. 36.*

## SURVEY OF CERTAIN TOWNSHIP OUTLINES IN THE DISTRICT OF THUNDER BAY.

NIPIGON, ONT., August 1st, 1920.

SIR,—I beg to submit herewith a detailed report on the survey of certain township outlines in the District of Thunder Bay, said townships lying north of the Canadian Pacific Railway, and adjoining the boundary line between the Districts of Thunder Bay and Algoma, said survey having been performed by me under instructions dated Toronto, May 12th, 1920.

Pursuant to instructions, I commenced my survey at an iron post planted by O.L.S. Stewart on the line between Townships seventy and seventy-one at the north-west angle of Township seventy, said point being also the north-east angle of Township seventy-one, and being 126 chains 47.9 links north of the centre line of the C. P. R. The meridian and base lines were run pursuant to instructions with the exception of the section of the first base line which forms the boundary between the Township of Atikameg and Bryant, which line was run from east to west, due to the position of White Lake. (See plan.)

The several lines were well cut out and well blazed—one man devoting his entire time to the blazing. All posts, iron and wooden, were correctly marked and planted, and the bearing trees taken wherever possible. Few cairns of stones were planted about posts as the country was, for the most part, sandy, and few stones could be found for this purpose. Particular care was given to the correct marking and planting of the iron posts, the digging of pits and making of mounds.

Frequent astronomical observations were taken, the notes of which accompany the field notes. I personally took the notes on the timber and soil, the chainmen doing the actual chaining only. While on the survey, I personally covered a considerable area on either side of each surveyed line to ascertain the size and extent of the timber, being particularly impressed with the large areas of spruce and banksian pine in the townships.

I beg to state that your instructions were closely adhered to in every respect. Before taking up in detail the timber, soil, etc.—may I advise you that I have been informed by reliable parties that the country to the north and to the west of these townships is well timbered, that the areas of spruce and banksian pine extend in these directions, particularly to the north, and that good water routes exist whereby such timber may be driven and brought out. If it is the intention of the Department to lay out additional townships for the sale of the timber therein, may I suggest that this territory be investigated before doing so?

## TIMBER.

Throughout the six townships excellent spruce was found, running from four to ten inches in diameter. There are large areas that will yield from twenty-five to thirty cords to the acre. It is impossible to note here the location of these areas, they exist throughout the entire six townships. Reference to the field notes and timber plan will give the locations of the best of this spruce. The Townships of McGill, Atikameg and Mikano are the best for spruce timber.

Banksian pine is found throughout all six townships in large amounts, excellent tie timber size. The Austin Nicholson Co., of Chapleau, under permit in previous years, has taken tie timber out from the Townships of Atikameg, Bryant

and Flood, but not to any considerable extent. They have merely touched the fringe of it. They have camps at present on the meridian line between the Townships of Bryant and Flood. Last winter through a sub-contractor this company cut 87,000 ties but were unable to get their drive out. They are at present erecting a new dam in an endeavour to get their ties out this summer. No attempt has been made to burn or dispose of the slash and there is grave fire menace through the several townships on this account, especially as there are Indians, trappers and tourists continually passing through, and camping in, this area. Two rather serious fires were burning in this area during the progress of the survey, fires which I personally investigated and found not to have been started near, or caused by my survey camps.

No adequate and complete report is possible on the extent of the banksian pine in these townships without a careful cruise being made. The townships are all exceptionally well timbered with banksian pine running from six to eighteen inches in diameter. I was particularly impressed with the possibilities for a sawmill to be located near the north-east angle of the Township of Bryant. Excellent roads could be made, several are actually in existence, out to the C. P. R. siding at Bremner. In view of the scarcity of, and high prices for, lumber in this district, I beg to suggest that, if these townships are put up for tender, a clause be included compelling the erection and operation of such a mill.

Aside from the spruce and banksian pine, there is very little other timber in the townships. There is some large poplar and a little cedar but not in amounts to be of commercial value. Very little balsam was found and the birch, although frequently mentioned in my field notes, was in areas small in extent and of little value.

#### SOIL.

The soil throughout the six townships was sandy with occasional rocky areas and frequent small areas of muskeg. The areas near the Shabotik River and in some other places near lakes or rivers was exceptionally good but these townships cannot be considered as good for agriculture, certainly not for settlement purposes. The value is to be found in the timber and in the timber alone.

#### GAME.

The country is overrun with moose, and in the southerly two townships, red deer. Partridges were exceptionally plentiful. Pike are found in all of the large lakes. Fishing operations, under permit, are now being carried on in White Lake—the main catch being whitefish.

#### ROADS.

The only roads through the townships are tote roads leading from the C. P. R. to the several tie camps and connecting the said camps. These roads are shown on the field notes. The entire country is very level, with the exception of the southerly part of the Township of Flood. Roads can easily and cheaply be built for logging operations in almost any part of the areas covered by this survey.

#### MINERALS.

There were no minerals at all to be found on this survey. The rock, where it was encountered, was granite.

## LAKES AND RIVERS.

As shown on the plan, White Lake and its connecting chain of lakes, form a water boundary to the west of the Townships of Bryant, Atikameg and McGill. This is a well travelled route, portages being short and well cut out. There are many lakes throughout the townships, all of clear, excellent water, with sandy shores. White Lake has rocky shores for the most part. This lake extends to Mobert and the Hudson's Bay Company post at that point on the C. P. R.

The Shabotik River crosses the Townships of Shabotik, Mikano and Atikameg in a general south-westerly direction. This is a wide, well travelled river, although Gum Creek, one of its tributaries, shown to be a well travelled river on existing maps, is impassable by canoes, being filled with log jams. For the information of cruisers, or others wishing to investigate these townships, I would suggest starting from Mobert and paddling up White Lake to the line between Atikameg and Bryant. The Townships of Bryant and Atikameg could be covered in that way. McGill could be covered by following the chain of lakes on to the north of White Lake. Shabotik and Mikano can best be covered by paddling up the Shabotik River on its north and south branches respectively. Flood could be reached by paddling up White River from the old, not the present, station of Bremner, or by taking one of the two existing tote roads that come out to the C. P. R. near mile eighteen on that railway. Should more detailed information be desired *re* the several routes for reaching the townships, I will be glad to supply same.

In conclusion, I beg to state that your instructions have been carefully followed in respect to the survey of these townships. I have put special attention upon the notes of the timber. I was particularly impressed with the great value of the spruce and banksian pine. I beg to enclose herewith plan and field notes, timber plan, astronomical observations, etc., etc., covering the entire work. Trusting that my work and this report upon the same will be found to be satisfactory.

I have the honour to be, Sir,

Your obedient servant,

(Sg.) M. E. CROUCH,

Ontario Land Surveyor.

*The Honourable, the Minister of Lands and Forests,  
Toronto, Ontario.*

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*Appendix No. 37.*

SURVEY OF KASHAWEOGAMA AND ISLAND LAKES, IN THE DISTRICTS OF THUNDER BAY AND KENORA.

THESSALON, December 1st, 1920.

SIR,—In accordance with your instructions dated February 28th, 1920, I have made a survey of Kashawegama and Island Lakes, in the Districts of Thunder Bay and Kenora, and beg to submit the following report.

I left home on the 9th March accompanied by one man and was joined by five men, according to arrangement at Sault Ste. Marie that evening. The

following morning I proceeded to Sioux Lookout via Franz and Fort William, and after securing there what was needed to complete my outfit, I proceeded to Bucke, where I arrived about two o'clock on the morning of Sunday, March 14th.

Word had been sent to Mr. A. H. A. Robinson, of the Department of Mines, Ottawa, to meet me in Bucke on Monday, March 15th, and he arrived on that date, his train being some hours late. I secured the services of a couple of local Indians with dog teams, to help move the outfit and supplies to the starting point of the survey, and found their help of great assistance, as even with their help, it was necessary to make two trips with the outfit. We found a very good trail as far as Lake Savant, where we branched off to the west, through a series of small lakes to Kashaweogama Lake. It was Friday afternoon, March 19th, before we were ready to start the actual survey. I had hoped to obtain an observation before starting, but cloudy weather prevented this, so a start was made from an assumed meridian on the morning of Saturday, March 20th. Fortunately, I was able to get an observation on Polaris early on Saturday evening, and corrected my bearings.

From this point on, the survey was carried on with all possible speed, as it was realized that the season was late, and the work had to be rushed in order to get out before the ice became too bad. We were held up occasionally for short intervals by stormy weather, and once just after we started, by a couple of hot days followed by rain, which took all the snow off the ice. The surface of the lake became so slippery that it was almost impossible to stand, and there was from four to six inches of water all over the lake. This, however, did not last long. For the most part, the weather conditions were good for the work, and the temperature continued low, so that the ice was still firm when we finished the survey on the afternoon of April 27th. During the last week we made it a point to be at work by daylight, in order to take advantage of the good walking in the early morning.

We started for the railway early on the morning of April 28th, and the trip out took two days. Considerable difficulty was encountered on account of the snow having nearly disappeared on the portages. Some of these were filled with fallen timber, so that our toboggans and snowshoes suffered severely, so much so that they were nearly all abandoned when we reached the railway. The ice on the lakes was quite firm, but some difficulty was experienced in getting on and off the ice as it was getting bad close to the shore.

The work on the survey was carefully done, all angles being measured with a transit, and the main traverse lines being measured with a Fice chain steel tape. The bearings were checked frequently by astronomical observations. The details of the shore line were measured with stadia rods, these measurements being taken close enough together to show all details of the shore line. At intervals of about a mile, a prominent tree was squared and marked with the letter "B" followed by the number of the tree in Roman numerals. Each island had a tree squared and marked in the same manner, except that trees on the islands were marked "I, No. —" followed by the number of the island in Roman numerals. These trees were all recorded in the notes, the bearings to them from the various transit stations being measured with a transit, and the distances with a steel tape.

The magnetometric survey which was to be carried on in connection with the shore line survey, was attended to by Mr. A. H. A. Robinson, of the Department of Mines, Ottawa, and this work was carefully and accurately done. The cross sections where the magnetic measurements were made, were laid off with a transit



and the distances chained. Soundings were taken where considered necessary, and the taking of these proved to be rather a laborious operation, as the ice in places was forty-two inches thick. As the area over which the magnetic survey was to be made did not extend much more than half way down Kashaweogama Lake, it was not necessary to continue this work any further, and Mr. Robinson left for home on March 31st, his work being done. Before he left I supplied him with a copy of my traverse bearings and distances, and such other information as was necessary for him to make a proper report, and I understand that his report has been filed in your Department some time ago.

There is not much to add to this report, as the timber and the geological features were reported on by Mr. Henry Bell, and by Professor Parsons, respectively, who accompanied me on the survey of the boundary between the Districts of Thunder Bay and Kenora in 1919. I might say in passing, however, that a very large portion of the territory adjacent to these lakes, as well as many of the islands in them, have been overrun by fire within recent years, and the timber destroyed. The result is that the greater portion of the country presents a most desolate appearance. The shores are mostly rocky, and the prevailing rocks are green schists and other rocks of Keewatin age. There is a short stretch of river between Kashaweogama and Island Lakes in which there is a fall of about three or four feet, which is passed by a portage on the north side about six or seven chains long. All of the waters of these lakes goes out via Dog River which leaves the west end of Island Lake.

The notes of the survey have all been plotted on cross section paper, on a scale of ten chains to an inch. Tracings of this plan in two parts, one showing Kashaweogama Lake, and the other showing Island Lake, have already been sent to your Department. These tracings show all the information that was obtained during the progress of the survey.

On account of having to get ready to start for Lake St. Joseph as soon as possible after the completion of the field work of this survey, it was not possible to complete the plans and other returns earlier in the season.

Accompanying this report, are a copy of my diary, time book, together with my pay sheets and accounts in triplicate, and I trust that you will find everything satisfactory.

I have the honour to be, Sir,

Your obedient servant,

(Sgd.) JAMES S. DOBIE,

Ontario Land Surveyor.

*The Honourable, the Minister of Lands and Forests,  
Toronto, Ontario.*

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*Appendix No. 38.*REPORT OF THE SURVEY OF CERTAIN TOWNSHIP OUTLINES NORTH OF THE  
CANADIAN PACIFIC RAILWAY, IN THE DISTRICT OF SUDBURY.

SOUTH PORCUPINE, December 1st, 1920.

SIR,—I have the honour, in accordance with your instructions to me dated May 11th, 1920, to submit the following report on the survey of certain township outlines, north of the Canadian Pacific Railway in the District of Sudbury.

On August 19th, my party arrived at the Woman River Station on the C. P. R., and the following morning proceeded down the river an approximate distance of four miles to the point where it intersects the meridian run by O.L.S. Speight in 1909. From this point part of the party proceeded north along this meridian to the twelve mile post, the starting point of the survey; the other members of the party proceeded down the river with supplies to be cached at or near the place where the 1st base line would cross the river.

The survey which commenced on August 26th was conducted throughout in strict accordance with your instructions. The base lines were run as chords of parallels of latitude, passing through the township corners. The east limits and west limits of townships were run north astronomically. Frequent observations were taken on Polaris, the notes of which accompany the other returns. In chaining, a clinometer was used at all times, and horizontal distances deduced from the measured slope. Distances across obstructions were measured by offset or triangulation. Many magnetic observations were taken, and the results thereof are shown in the field notes. The lines were well cut out and blazed, and posts of the specified varieties of wood were planted where required. Iron posts of the standard pattern, shipped by you to Woman River Station, were planted, and the necessary pits, mounds and trenches constructed as called for in your instructions.

Unusually low water in the streams this season made transportation difficult, but this was more than offset by the ideal weather conditions.

## SOIL.

The country through which the lines passed is mostly rough and hilly, but in small tracts undulating, and can hardly be classed as agricultural. The soil, except in the swamps and valleys, consists of a few inches of leafy loam and twelve to eighteen inches of sand and clay on bed rock, as a rule. The swamps like all others of Northern Ontario, have varying depths of moss and muskeg.

## TIMBER.

Approximately the western half of Dore and Garnet appear to have been burnt over about six years ago, and the ground is now covered with semi-decayed fallen timber, and a new growth of small poplars and birches. The remaining portion of the territory, except in small strips along streams and lakes, apparently had been burnt over about thirty years ago, and is now covered with a thick growth of healthy timber, large areas of which is pulpwood size. A few white and red pines survived the fires and are now thriving, apparently. The varieties of timber are spruce, balsam, white birch, poplar and banksian pine on the high lands, and cedar, small tamarac and black ash on the low lands.

## MINERALS.

The greater part of the rock throughout the country is granite and greenstone. Many small stringers of quartz were observed, but no large veins. Small stringers of hematite were noted in several places along the line between Heenan and Fenton Townships, but are not likely of any economic importance.

## WATER POWERS.

There are three small water powers on the Ridout River within the limits of the land surveyed, and one larger power, but in a dry season like this the amount of power that could be developed would be almost negligible.

The water in all lakes and streams is clear and pure.

## GAME.

Large and small fur-bearing animals were numerous. Beaver work was seen in or along nearly all lakes and streams, and there were many indications of timber wolves, fox, lynx, fisher, otter and bear. Moose were very plentiful, and a few indications of red deer were observed. Partridge of different varieties were very plentiful, also. The lakes and streams contain pike, pickerel, trout, and whitefish.

I am submitting with this report a general township plan, a timber plan, field notes, account in triplicate and the required affidavits.

I have the honour to be, Sir,

Your obedient servant,

(Sgd.) CHAS. V. GALLAGHER,

Ontario Land Surveyor.

*The Honourable, the Minister of Lands and Forests,  
Toronto, Ontario.*

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*Appendix No. 39.*

SURVEY OF THE NORTH SEVENTY-EIGHT MILES OF WEST BOUNDARY OF NIPIGON  
FOREST RESERVE AND PRODUCTION THEREOF NORTH TO WHITEWATER  
LAKE, DISTRICT OF THUNDER BAY.

PORT ARTHUR, ONT., October 12th, 1920.

SIR,—We beg to report that in accordance with your instructions dated May 18th, 1920, we have completed the survey of the meridian forming the west boundary of the Nipigon Forest Reserve, and produced it north to intersect the south shore of Whitewater Lake.

A copy of the map of the Geological Survey of the Department of Mines, Ottawa, is enclosed showing our route coming from Whitewater Lake to the National Transcontinental Railway. A copy of this map and one furnished by

your Department were used by our supply men this summer and they report that they found them substantially correct. As shown on the map there is another route to Whitewater Lake from Outlet Bay on Smoothrock Lake by which it would appear to be easier to get to the end of our line, but was not used by us as we did not move farther north than the south-west bay of Whitewater Lake. Our route strikes the railway at a point about two and one-quarter miles east of Collins Station, the track passing over the last lake on the route, from the end of this lake a portage may be made into Trout Lake, Collins being only a short distance from the west end of this lake. From Gnome Lake, shown on the map to the track, the route appears to be different from that on the map, there are three portages from the track to Gnome Lake which is easily recognized and from this point the route is as shown on the map. There is said to be a route without portages from the south end of Tamarac Lake to the track but we were unable to find it.

The survey was commenced at the iron post planted at the north-west angle of the Black Sturgeon Timber Limit and run north astronomically ninety-four miles, twenty-four chains and twenty-two links to the south shore of Whitewater Lake, crossing the Canadian National Railway at fifty-eight miles, four chains and ninety-eight and four-tenths links. Observations were taken at sufficient intervals to keep the line within the specified limits. The normal magnetic variation was zero degrees. Iron and wooden posts were planted as directed in the instructions in regard to same. In some cases where it was not found possible to dig pits and make mounds on account of rock and boulders, where an iron post was to be planted, and it did not appear that any better conditions would prevail for a considerable distance, the iron post was set in place but the pits and mounds were omitted, such points are shown in the field notes.

The soil for the most part is sandy, a very large proportion of the country being a boulder bottom. In the south fifteen miles spruce swamps are the most prominent feature, there is some clay and clay loam land between these swamps but these areas are not large. Through the last twenty-five miles there is considerable of the rock and swamp typical of this part of the country.

Up to the thirty-fifth mile the country passed through is well timbered, spruce being the principal species, a large proportion of the trees are up to twenty-eight inches in diameter. There is also good jack pine in this section although not as plentiful as the spruce, about eighteen inches in diameter is the limit for this timber. There is a good stand of jack pine about one mile across north and south just north of the Gull River. There is also in this area birch up to sixteen inches, poplar to eighteen inches and balsam to eighteen inches, a few scattered white pine were seen on the seventeenth mile. From the thirty-fifth mile north the timber has for the most part been burnt or else is too small to have any value. There are a few spots shown on the timber plan where there is timber of good size, there are also small isolated areas, principally swamps in the stretches shown as burnt which are green.

The rock formation seen was almost uniformly granite; no minerals were seen.

No water powers of any magnitude were met with, although the supply men state that there is a big fall in the Gull River a few miles west of the line.

Throughout the whole line moose were plentiful and in some parts deer and caribou were seen, the latter notably in the region of Caribou Lake. Fish,



except pike, were not found to be plentiful in any of the lakes or rivers except Clearwater Lake and this appeared to be well stocked with trout.

We have the honour to be, Sir,

Your obedient servants,

(Sgd.) PHILLIPS & BENNER,

Ontario Land Surveyors.

*The Honourable, the Minister of Lands and Forests,  
Toronto, Ontario.*

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*Appendix No. 40.*

739 BROADVIEW AVE., TORONTO, ONT., October 29th, 1920.

SIR,—Acting under instructions received July 17th, 1920, from the Department of Lands, Forests and Mines to accompany the Canadian Aero Film Co. in their flight to James Bay, I kept in touch with the said company to ascertain their date of departure. In due course I was informed that the plane would leave Hamilton, Monday, July 19th, 1920, so I left Toronto on that date in company with Mr. Fred Griffin, arriving at Cochrane on the following evening.

The plane on a trial trip Monday had an accident that was more serious than was first supposed, and so did not reach Lillibelle Lake, which is two miles north of Cochrane, until Wednesday afternoon, August 11th, 1920.

The party consisted of Mr. Irwin Proctor, President of the Canadian Aero Film Co., Capt. Roy Maxwell, pilot, George Doan, mechanic, Jack Hyde, rigger, Roy Tash, cameraman, H. M. Blake, of the Ontario Government Motion Picture Bureau, Fred Griffin, of the *Toronto Star Weekly*, and myself.

The plane used on the expedition was a HS2L Curtiss-built seaplane, having a maximum speed horizontal flight of eighty-five miles per hour and a consumption of gasoline of thirty gallons per hour, full open.

#### ABITIBI TRIP.

On August 13th a trip was made from Lillibelle Lake north and east of the Abitibi River down towards New Post.

Observations from the plane showed that the country lying for fifty miles east of the Abitibi River almost as far as New Post was dotted with small grassy lakes varying in size from one hundred to two thousand feet in length. Lakes of the same size were also noticed on the west bank, but numbering only about one-third those on the east bank. The lakes were general as far as the eye could see.

The area east of the Abitibi River and extending from the junction of the Frederick House and the Abitibi River north to near New Post was a dense unbroken forest, mostly spruce (eighty per cent.), some tamarac, and very little birch and poplar. About four per cent. of the area was water. No burnt areas were seen.

On the west side of the Abitibi River the forest was more broken being about twenty per cent. bald rock, two per cent. water, fifty per cent. spruce and the rest birch and poplar. This area differs from the east side of the Abitibi River, being dotted with patches of larger spruce of timber size (about fifteen per cent. of the spruce).

Small creeks running into the east bank of the Abitibi down which logs could be driven were fairly numerous.

A number of moose were seen on the shores of the lakes from the plane during the flight.

On account of the narrowness of Lillibelle Lake we missed the tops of the trees by about five feet while taking off for the Abitibi flight. As this had happened with the plane not fully loaded, Capt. Maxwell decided that Lillibelle Lake was too dangerous for a base. A scouting party left the next day on a gasoline jigger west from Cochrane on the Canadian National Railway to find a more suitable spot. Remi Lake, three miles north of Moonbeam Station, was decided on as the best possible place for a base. Our supplies were then shipped to Moonbeam and carted into a clearing on the north shore of Remi Lake where camp was pitched. The plane flew over light, taking one hour and thirty minutes.

Captain Maxwell reported finding a number of burnt areas for the first twenty miles. The next twenty miles he met a series of small lakes running north and south. There were also rock outcroppings with many patches of beaver meadow; the rest of the country passed over being thickly wooded with spruce of pulpwood size. Some eight or ten miles from the railroad along the Ground Hog River fire had swept both banks eating into a depth of two and a half miles on the west bank.

#### REMI LAKE DISTRICT.

A number of short trips were made to test the machine, get a general idea of the country and take pictures.

The ground was slightly undulating around Remi Lake and thickly wooded with about sixty-five per cent. spruce, the rest being hemlock, balsam, birch, poplar and cedar. The poplar and birch were in patches with long thin lines extending into the spruce areas. On account of the poplar and birch being a light green they were easily distinguished from the spruce which is a very dark green.

Captain Maxwell with his mechanic left on August 17th with the intention of caching some gasoline about half way to James Bay, in order to have sufficient to enable them to return to Remi Lake should the plane meet a storm or strong southerly wind on the trip back.

On the trip down they were unable to find a suitable spot to land so went right through to Moose Factory leaving thirty gallons of gasoline at the Revillon Freres' post there. They returned the following day, leaving the next day to cache thirty gallons of gasoline on a lake about twenty-five miles north of Remi Lake, which they had seen on the previous trip. This was done as a precaution against a forced landing through lack of fuel.

#### MATTAGAMI-MOOSE TRIP.

On August 27th we left for Moose Factory from Remi Lake. The country passed over just after leaving Remi Lake was very thickly wooded, with a few lakes. The trees were mostly spruce (about sixty-five per cent.) the rest being

tamarac, balsam, poplar, birch and balm of gilead. We travelled in a northerly direction, passing over three lakes on only one of which we could land, until we reached the Kapuskasing River. All this country which we came over and as far as we could see was densely wooded, about sixty-five to seventy-five per cent. of the trees being spruce of pulpwood size with patches of larger spruce of timber size (about fifteen per cent. of the spruce) among them. These could be distinguished as we were travelling at a height of 1,200 feet. The day being hot there was a heat haze which made the horizon quite indistinct and of a brownish colour. About forty miles north of Remi Lake and east of Devil's Rapids there were five lakes. They were too small to land on and take off again with any degree of safety. About fifty miles from Remi we first met muskeg. It was only in small patches, the rest of the country being well wooded. As we proceeded up the Mattagami the country on the east side was well wooded with spruce



Forced landing on Mattagami River.

although patches of poplar and birch, some of them being about two miles long, also showed. On the west bank it was also well wooded but gradually as we proceeded north the patches of muskeg became larger, until about fifteen miles south of the junction of the Missinaibi and Mattagami Rivers where again it became thickly wooded with spruce, tamarac, poplar and birch, and extended north to the junction.

Just previously to crossing O.L.S. Speight's line, which could be seen quite clearly from the air, and lying west of the river were six lakes of considerable size, the largest being about twelve square miles.

About twenty miles south of the junction of the Missinaibi and Mattagami Rivers along the east bank of the Mattagami there was a strip of muskēg about one-half mile wide extending northerly eight or ten miles, which had the appearance of an old river basin. Beyond the muskeg it was well wooded as far as the west bank of the Abitibi River.



Along the Moose River it was fairly well wooded near the banks, but beyond, to the west, there was nothing but muskeg wooded with scrubby spruce and tamarac. At the junction of the Abitibi and the Moose, and between the rivers, it was thickly wooded mostly with spruce, some of good size, tamarac, poplar and birch. It is here that the Hudson Bay Company get the timber that they use in their mill, some of the white spruce being about two feet in diameter (see photograph No. 19). At the mouths and along the Kwataboahegan and French Rivers it was thickly wooded with spruce, tamarac, poplar and birch.

The Mattagami River was very dry and the shoals could be easily seen; for miles the rocks showed up bleached and white, while down the centre of the bed was a small stream of water.

The islands at the mouth of the Moose River were thickly wooded.

One thing noticeable was the absence of streams of any size emptying into the main rivers; nor were there any lakes visible.

There were no burnt areas noticed.

The visibility was rather poor on this trip on account of the heat haze before mentioned, which in the distance gave things a brownish tint.

The difference in elevation between Remi Lake and James Bay was 925 feet. This was checked on the five trips.

#### THE SHORES OF JAMES BAY.

It was observed on the trips along the shores of James Bay both to the east and to the west that the character of the coast was extremely low and flat. At low tide a mile or more of mud is left bare. Photographs Nos: 36, 37 and 38 show this very plainly. They were taken about half tide.

A muskeg wooded in patches with scrubby spruce, tamarac and alder ran for at least fifty miles back from the shore. There were no large water courses we could follow to enable us to go further inland, neither were there lakes on which we could land in order to examine the country.

On the trip along the shore to Hannah Bay countless wild geese and ducks were seen. They looked very small below us, giving a black and white wave effect, as they flew in towards the swamps. Hannah Bay is a wonderful breeding place for these geese and ducks, and the Indians go there from Moose Factory returning with boat loads full of these birds. They cook and pour lard on them which keeps them until they are needed in the winter time.

The channels leading into James Bay at the mouth of the Moose River are very shallow with numerous bars and shoals. (See photographs 31, 32, 33 and 34.)

The steamer used by the Hudson's Bay Company to carry goods from the Charlton Islands, drawing six to eight feet, cannot cross the bars at the mouth of the Moose River at low tide.

Climate at Moose Factory is generally more moderate than at Remi Lake, not having such extreme temperatures. At Remi Lake, August 22nd, after a hot day we had quite a heavy frost at night, the next day again being hot, while at Moose Factory there had been no signs of a frost, but sudden changes have been known to take place when the wind changed from a southerly to a northerly direction, the temperature dropping as much as forty degrees in half an hour.

On Moose Island, potatoes, cauliflower, beets, carrots, turnips, etc., are grown, as well as hay, oats and wheat. The oats and wheat do not always ripen but



this year, owing to favourable weather conditions, they ripened about September 10th.

Revillon Freres' post on the mainland is built on a muskeg which has been drained. They can grow potatoes, but of a poorer quality than those on Moose Island. They get a good crop of hay. If the moss were burned off and the flats drained it would make good soil for hay and grazing purposes.

The soil on the islands at the mouth of the Moose River is very rich owing to its being of delta formation. These often escape frosts that occur on the mainland. Therefore, the quality and quantity of the produce grown on Moose Island should not be taken as a criterion of the possibilities of the mainland in this neighbourhood.

The rivers were very shallow this year and canoes going up to the railroad had to be poled for miles. The rocks shown in photographs Nos. 6, 21, 22 and 24 in ordinary years are covered by water.

In all five trips were made from Remi Lake to Moose Factory carrying four passengers and baggage as well as one hundred gallons of gasoline to use on the flights along the shores of James Bay. All gasoline that we used on our trips from Moose Factory had to be transported there by the seaplane.

The trip from Remi Lake to James Bay was very trying. The pilot generally had to rest for a few hours after making each flight. It was also dangerous, there were so few places where the plane could land with safety. Had the rivers been anything like their size during the flood season there would have been many suitable landing places.

The weather was exceptionally hot, causing a peculiar state of horizon. A bush fire was raging near New Post and a number of small fires were burning near Remi Lake. For days the smoke hung over the land delaying our departure. At Moose Factory the fog and mist, which came in with the tide, were also another cause of delay. In the middle of a hot calm day it was difficult to gain height and the air was exceedingly bumpy, making travelling very uncomfortable.

I would suggest on any future flights, in order to make extensive journeys through the unexplored regions around James and Hudson Bays, that the trip be planned far enough ahead so that a supply of gasoline could be landed at James Bay by boat or floated down the Albany by scow in the spring. As will be noticed from the description of the plane, thirty gallons of gasoline is consumed per hour, thus a considerable quantity of fuel would have to be cached on James Bay in order to carry on the extensive operations which the country warrants.

I have the honour to be, Sir,

Your obedient servant,

(Sgd.) E. T. IRESON,

Ontario Land Surveyor.

*The Honourable, the Minister of Lands and Forests,  
Toronto, Ontario.*

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*Appendix No. 41.*

## QUETICO PROVINCIAL PARK.

## SUPERINTENDENT'S REPORT.

KAWENE P.O., November 2nd, 1920.

*The Honourable, the Minister of Lands and Forests,  
Toronto, Ontario.*

HONOURABLE SIR,—I beg to submit my report for the fiscal year ending October 31st, 1920.

During the season a quantity of fur was taken from the Park, but owing to the unusually early "freeze up" last year we did not get started in time as our traps had not arrived when the canoeing closed, and also many of the rangers were unaccustomed to trapping. However, one hundred bears and a number of smaller furs were taken. Owing to the extremely high wages paid for labour in this district rangers were very hard to get, and many that applied were not competent canoeemen.

I am pleased to say we had no fires in the Park this year. The summer season in this district was very wet, the water being higher than for five years before. Owing to the unusually high water two docks and one bridge were washed away, but all have since been rebuilt.

Bass have been found in a small lake south of Quetico Lake. This is the farthest north that bass have been discovered on the Park.

Fur and game are very plentiful, particularly beaver, which are now both in the Park and surrounding district.

Partridge are very plentiful, as I can count while writing this report eleven partridge feeding on the clover at the doorway.

We have had more tourists than ever before, mostly Americans; five hundred and twelve dollars being collected for fishing and guides' licenses.

We will be obliged to build a barge for transportation of horses and supplies on Eva Lake, as the one now in use is worn out and no longer serviceable. Provision will be made for the building of the barge this coming winter.

One of our gasoline engines is out of order and must be sent to a machine shop for needed repairs. One canoe will also be required for next season's work.

I am, Sir,

Your obedient servant,

(Sgd.) HUGH McDONALD,

*Superintendent Quetico Park.*

*Appendix No. 42.*

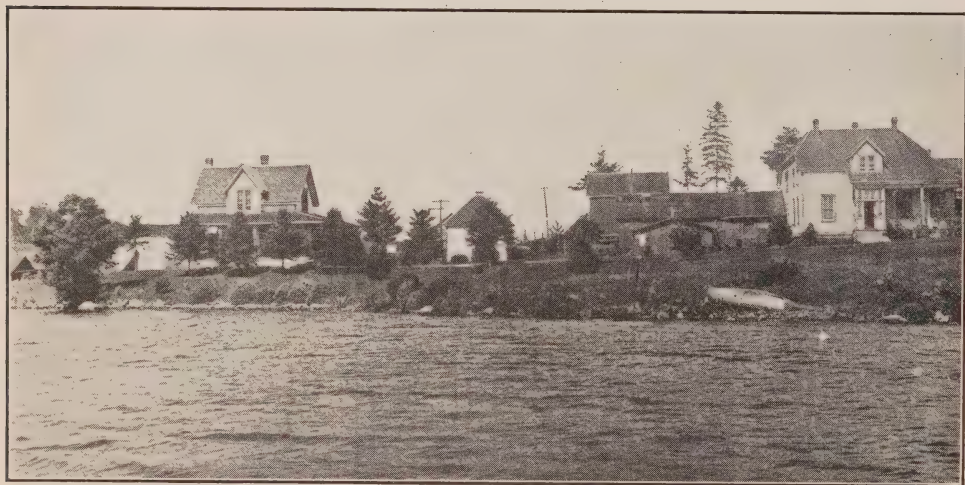
## ALGONQUIN PROVINCIAL PARK OF ONTARIO.

HONOURABLE SIR,—I beg to hand you my twenty-second report on the Algonquin Provincial Park for the fiscal year ending October 31st, 1920.

Our staff has been composed of twenty-nine rangers and superintendent, housekeeper for rangers' quarters; and caretaker, whose duty it is to keep the grounds in order and the rangers' quarters.

## RANGERS' DUTIES.

The duty of our rangers during the trapping season is, of course, to see that no illegal trapping is done within the Park boundaries, and, considering the vast territory to cover, and the many means of entrance to watch, they have succeeded



Headquarters—Algonquin Park.

very well in doing so, although, no doubt, some lawbreakers have escaped. The rangers have made during the year eight arrests, and succeeded in having imposed fines to the amount of \$325.00, in addition to \$25.00 costs, the latter sum representing the amount paid to bring in the parties. Where no costs were imposed the parties paid their way coming in. In every case their traps, etc., were confiscated, especially in the case of one gang that had everything taken from them, tents, blankets, rifles and provisions, one of the members being an old offender.

In this connection I would recommend that all rangers be made Provincial constables, so that they could follow a man out beyond the Park, and make arrests. Some of them were so made years ago.

During the year when no trapping is going on our men patrol the Park, cutting out portages, repairing shelter houses, and seeing that the Park regulations are carried out generally, particularly with regard to camp fires; and I am glad to report that notwithstanding the hundreds who spend the summer canoeing and camping in the Park, we have had very little trouble along these lines. We find



the public generally much more alive to the importance of care in this matter than they were years ago. I consider the posters, put up each year by the fire rangers, have had a good deal to do with this.

#### FIRES.

We had some rather bad fires along the Canadian Northern Railway, but they did not do a great deal of damage in the Park. On the south side we have been very fortunate, as the fires that started along the railway were caught in time and no damage done. The fire tank has been stationed here all summer with two men in charge, constantly in readiness to go out on the first train to any fire started along the railway. This, with the telephone service, has very much minimized the damage along the railway from fires started by locomotives, which were our greatest menace.

#### GAME.

Game of all kinds is increasing all over the Park, especially the beaver, the annual increase of which must run up into thousands. Otter, mink, martin and fisher are also abundant, while the deer are greatly in evidence everywhere. Wolves are still numerous in the Park and take a large toll of deer. The rangers are doing their utmost to destroy them, and a number are killed every year. The past winter was an unusually good one for the deer and partridge, and I never saw them come through in better condition.

#### LIVE BEAVER.

Regarding the taking of live beaver for shipment from the Park, last year an order was taken for something over one hundred for points in the United States. Of these fifty were shipped, but owing to the embargo placed upon shipments by the United States we discontinued taking them. We were at a considerable loss after having made preparations to take the full number which we would have had shipped in time if the express people had taken them: as it was, we had to keep the fifty over for some time, and it took the time of a man to attend to them and carry food from the bush to feed them. The price obtained was less than the skins were worth, while the work of taking them alive is ten times greater than taking the pelts, when you have to hold them over any time.

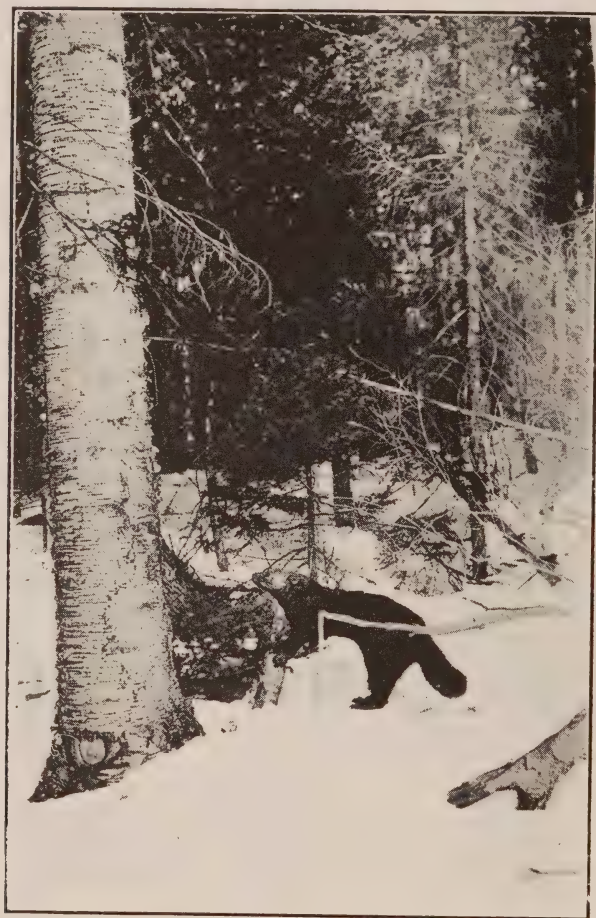
I would therefore recommend that the price of live beaver, if you should decide to take them, be put at \$150.00 a pair. The dealers we have at times supplied in the States charge \$100.00 per animal, and we have been supplying them at \$30.00 each. It was through no fault of ours that all orders were not filled last year.

I would respectfully recommend that all live animals sold from Algonquin Provincial Park, if possible, be disposed of in Canada. There is so much red tape in connection with shipments to the United States, that in getting back our empty crates it is hardly worth the bother it gives. For instance, I have only just got last summer's empty crates released by customs here, after at least a dozen letters and paying entry fees. I have no doubt, now that the war is over, many people in Canada will turn their attention to breeding fur-bearing animals, and a market could be found for all the Government wish to take out. The price, however, should be at least four times the value of the pelts, as they represent at least that much additional cost. A large quantity of fur has been taken out and sold in Toronto, bringing the nice sum of \$14,179.00.



## TOURISTS.

From a tourist standpoint this has been the most successful year since the outbreak of the war, and we were glad to see many of our young men back who had been overseas. Many came here to build up again, and the amount of benefit received was certainly a tribute to health giving qualities of our great Provincial health resort. The fishing was good, and some very fine specimens were taken both of speckled and salmon trout, and small-mouthed bass. People are beginning



A fisher, snapped in the park.

to realize the value of this vast reserve and health giving region and are taking a deeper interest in all that pertains to its improvement and protection. We sold this year fishing licenses to the amount of \$1,821.00, and guides' licenses to the amount of \$54.00. Guides pay a license of \$1.00 each, so that we had 54 licensed guides working in the Park during the past year. These are paid by the different tourist parties coming in at the rate of \$4.00 per day and canoe found, and \$4.50 if the guides furnish their own canoe. This represents over \$5,000 a month paid to men of the Province, principally by citizens of the United States in this one section alone, and gives a very faint idea of what the tourist

trade means to the Province of Ontario. We have collected in rents \$810.00 which does not include the rents paid by the Grand Trunk Railway and others direct to Toronto. A number of new leases have been granted.

I would recommend a survey being made of Rock Lake such as was made of Cache Lake, and \$10.00 being charged each applicant for lease in addition to the rental to cover survey. This work could be done now to advantage, as it could all be done on the ice with the help of our rangers, and the parties could stop at our shelter houses. This lake is pretty well crowded now, and Rock Lake is being taken up fast. It is very difficult to give a description of the parcels asked for without a survey.

#### SCHOOL CAMPS.

We have a number of school camps in the Park which represent some fifty people, mostly boys. On Cache Lake we have The Large Girls' Camp under



Algonquin Park Inn, Railway Station, Pavilion.

the management of Miss F. L. Case, of Rochester, N.Y. At this camp we have some seventy-five persons including help and instructors. These camps are a great boon to the young people who attend them, and they go home from the holiday built up mentally and physically, and it begets in them a love of the outdoors that makes them infinitely better citizens wherever they may locate.

#### CORDWOOD.

The 541 cords of wood left over from last year, of the wood taken out at headquarters by our rangers and some help, has been shipped to different points. The shipping of that taken out by jobbers still drags on and will not be finished until well on in 1921.

#### HOTELS.

The hotels in the Park have been crowded to their full capacity and many applicants had to be refused while a great many people tented out all over the Park. The Highland Inn will be open all winter, and is pretty well booked up.

The Grand Trunk are putting in an electric plant here which will be a great improvement, and it might be more economical for the Government to secure light from them instead of using gas, as now.

A survey of the eastern boundary was made, and I would recommend one being made of the western boundary, as there are hunting camps right up to the line in many places, and it is very poorly defined. I have iron Park notices for the boundary when surveyed that will make it impossible for any one to trespass unknowingly.

Yours very truly,

G. W. BARTLETT,

*Park Superintendent.*

*Honourable Beniah Bowman, Minister of Lands and Forests,  
Toronto, Ontario.*

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*Appendix No. 43.*

HONOURABLE BENIAH BOWMAN,

*Minister of Lands and Forests, Ontario.*

SIR,—I have the honour to submit my report of the work performed by the Colonization Roads Branch of the Department of Lands and Forests, for the fiscal year ending October 31st, 1920.

Following the system I adopted last year, I am presenting the report in tabulated form. By the use of this method, the details can be given in a more concise form than in any other. On the final page is shown a summary of the total amounts of the various classes of work performed.

The total expenditure for the year was \$451,808.59. Of this amount \$265,993.05 was expended directly by the Government upon roads, bridges, and special road drainage, in some three hundred and twenty-five different townships. The amount expended upon inspection and miscellaneous services was \$23,263.29, the balance, a sum of \$162,552.25, was distributed as grants to one hundred and forty-six municipalities which had expended sums totalling double this amount under Colonization Roads By-laws.

With reference to future expenditures on Colonization Roads, I would recommend that the only roads upon which the Government should consider making the entire expenditure, without local assistance, would be leading, main, market, or trunk roads, or roads connecting up isolated settlements. On any other roads, the total expense should not be borne by the Government alone, but the work should be undertaken by local governing bodies, such as municipal councils, where townships are organized under the Municipal Act, or township road commissioners, where the townships are organized under the Statute Labour Act. In these cases, the expenditures should be supplemented by Government grants to be expended by such local bodies under the supervision of an Inspector or Engineer of the Department.

Some such system as this, I think, would tend to increase local interest in road construction and maintenance, and cultivate a more self-reliant and independent spirit in the various localities where expenditures are being made by this branch, by placing the responsibility for the efficient carrying on of much of the roadwork on the local officers of the different townships.

I have the honour to be, Sir,

Your obedient servant,

C. H. FULLERTON,

*Superintendent Colonization Roads.*

Toronto, Ontario, October 30th, 1920.

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## DEPARTMENT OF LANDS AND FORESTS, ONTARIO.

ANNUAL STATE

NUMBER	NAME OF WORK	NEW CONSTRUCTION							DITCHED
		Cleared and Stumped		Graded and Shaped		SURFACED			
		Length, rods	Width, feet	Length, rods	Width, feet	Material	Length, rods	Width, feet	
1	Aberdeen Township roads .....	120	60	100	18				
2	Aberdeen, additional Beaver Hill road.			220	24	gravel	280	5	440
3	Addington road .....								
4	Admaston Township roads .....								
5	Airy Township roads .....								
6	Albemarle Township roads .....								
7	Alice and Fraser Township roads ....	240	60	160	24	gravel	55	6	
8	Allan Township roads .....								
9	Allan Township drainage .....								110
10	Anson and Hindon Township roads ..								
11	Anstruther Township roads .....								
12	Appleby and Dunnett Township road.	182	18	182	14	gravel	8	6	
13	Armour and Ryerson Township road.	400	40	480	16				
14	Armstrong Township roads .....								
15	Assiginack Township roads .....								
16	Aubrey Township roads .....								
17	Badgerow Township roads .....								
18	Badgerow, Gibbons and Field Twp. rds.								505
19	Bagot and Blithfield Township roads.	180	35	180	15	gravel	150	10	
20	Baldwin Township roads .....	240	40	440	14				
21	Baldwin Township drainage .....								100
22	Balfour Township roads .....								
23	Bangor Wicklow and McClure Tp. Rds.	40	40	40	14				
24	Barber Township road .....	200	20	200	26				418
25	Barrie Township road .....								
26	Barrie Island roads .....								
27	Barrie Island drainage .....								200
28	Belmont and Methuen Township roads.	299	40	320	12	gravel	24	8	
29	Bethune Township roads .....	280	14	280	12				
30	Bexley Township roads .....								
31	Bigwood Township roads .....	350	14	400	14	gravel	50	6	
32	Bigwood, Kirkpatrick drainage .....								510
33	Billings Township road .....	80	40	80	32				
34	Bleazard Township roads .....								160
35	Bonfield Township roads .....	100	50	100	16				
36	Boulter Township roads .....	160	40	160	15				
37	Bracebridge-Baysville road .....	100	50	100	35	gravel	100	10	403
38	Brethour Township roads .....	1,445	40	495	24	clay	15	8	210
39	Brethour and Casey townline .....								
40	Brethour and Pense townline .....								
41	Bright Township roads .....								
42	Broder Township roads .....	199	35	100	25				345
43	Bromley Township roads .....								
44	Brougham Township road .....								
45	Brudenell and Lyndoch Township Rds.								320
46	Bucke Township roads .....	290	30	395	22	gravel	50	6	335
47	Burpee Township roads .....								35
48	Burpee Township, drainage .....								170
49	Burleigh Township road .....								
50	Calvin Township roads .....								
51	Cameron Township roads .....	280	40	80	16				

## COLONIZATION ROADS BRANCH.

MENT. 1919-1920.

BRIDGES			CULVERTS		CUT AND FILL		MAINTENANCE											
Number	Span	Material	Number	Material	Material	Cubic yards	Side- Brushed		Graded and Shaped		SURFACED			MILEAGE	EXPENDITURE		NUMBER	
							Length, rods	Width, feet	Length, rods	Width, feet	Material	Length, rods	Width, feet					
			1	wood	earth	40			760	20	gravel	605	5	3.00	\$	c.		
			6	cedar	earth	150	280	15	35	24	gravel	960	6	.38	318	42		
			4	metal			20	30	288	16	gravel	751	6	4.00	4,900	00		
			10	wood					400	16	gravel	60	8	1.50	975	00		
			6	metal	clay	60			165	18	gravel	180	5	.57	500	00		
			2	rock	earth	450			320	22	gravel	270	7	1.75	1,347	00		
			1	wood										1.75	700	87		
			7	wood	stone	200	60	10	860	18	gravel	127	6	.34	200	00		
			2	cedar	stone	39			82	15	gravel	63	7	.50	300	00		
			6	wood										.60	997	92		
1	16	cedar	2	cedar										1.50	375	00		
					clay	2,951			400	18	gravel	640	8	4.00	3,306	01		
			1	wood					100	24	gravel	1,040	6	4.00	1,273	04		
											gravel	240	7	.75	386	63		
			10	wood					3,200	12	gravel	221	6	11.00	1,699	18		
1	re paired		6	cedar					650	18	gravel	300	6	3.00	965	50		
			1	cedar			300	30	640	14	gravel	805	6	.25	898	90		
			4	wood	earth	240					gravel	35	7	1.50	729	84		
														.31	175	00		
							80	18	80	18	gravel	80	18	.25	175	00		
			8	cedar	rock	100			560	14	gravel	260	7	2.50	1,211	21		
			9	wood	clay	75								.62	599	22		
					stone	60			140	14	gravel	140	8	.43	402	90		
			5	wood	earth	125	80	20	360	24	gravel	349	5	1.50	1,189	65		
														.62	149	75		
1	22	plank	2	wood	stone	90					clay	40	7	1.25	299	90		
			11	cedar					201	15	gravel	201	6	1.50	650	00		
			4	metal	stone	105	20	10	668	22	gravel	280	6	2.75	814	30		
1	12	wood	7	wood					400	14				2.50	1,400	00		
					earth	100								1.75	450	00		
			3	rock	stone	20			280	24	gravel	600	7	3.00	1,276	02		
					stone	25			1,220	15				4.00	716	50		
			7	wood					765	16	gravel	165	8	3.00	1,500	71		
			1	wood					30	16	gravel	20	8	.75	451	09		
			6	wood	stone	95			350	24	gravel	350	10	1.75	4,989	62		
			1	wood	clay	66					gravel	140	7	5.25	2,058	92		
											gravel	219	7	.69	400	00		
					clay	370			160	20				.50	250	00		
							80	18			gravel	392	5	1.25	600	78		
			13	cedar	gravel	445			2,900	18	gravel	90	8	10.00	1,981	93		
									30	35	gravel	223	8	.75	800	00		
			2	cedar					320	14	gravel	200	7	1.00	506	75		
			13	cedar					1,420	14	gravel	490	8	4.50	1,102	25		
1	20	log	5	cedar	clay	740			640	22	gravel	441	7	4.75	2,844	55		
			6	wood	stone	419	30	12	320	22	gravel	460	5	2.25	1,561	25		
														.54	300	00		
			4	wood					85	16	C. stone	70	7	.22	300	00		
			7	wood					100	16	gravel	145	8	.75	575	75		
														1.10	805	05		

## DEPARTMENT OF LANDS AND FORESTS, ONTARIO,

ANNUAL STATE

NUMBER	NAME OF WORK	NEW CONSTRUCTION						DITCHED	
		Cleared and Stumped		Graded and Shaped		SURFACED			
		Length, rods	Width, feet	Length, rods	Width, feet	Material	Length, rods		Width, feet
52	Campbell Township roads								20
53	Campbell Township drainage								70
54	Cane Township roads	16	35	236	26	gravel	137	7	114
55	Capreol Township roads	680	40	160	15				160
56	Carden Township roads			18	16	gravel	37	6	
57	Carden, Laxton Victoria road								
58	Carden-Bexley Victoria road								
59	Cardwell Township roads	400	50	400	20	earth	400	16	
60	Carling Township roads	240	40	160	30				100
61	Carlow Township roads								
62	Carnarvon Township roads								
63	Cartier Township roads	240	12						240
64	Casey Township roads	545	12	538	12				590
65	Casimir Township road	6	14	14	12				14
66	Cavendish Township roads								12
67	Chaffey Township road	40	40	40	30				
68	Chandos Township roads								
69	Chandos Township drainage								170
70	Chapleau Township roads			222	40	metal	150	30	206
71	Chapman and Croft Township road								
72	Chapman and Lount road	16	8	16	8	gravel	16	8	
73	Chisholm Township roads			200	16				
74	Christie Township roads	94	40	34	16				20
75	Clarendon Township roads	325	40	325	12				
76	Clarendon and Lavant road			287	16				420
77	Clarendon and Miller road								
78	Cockburn Island roads	175	40	160	30				
79	Coleman Township road								40
80	Cosby, Martland, etc., boundary			600	14	gravel	1,200	6	
81	Creighton Township road								360
82	Crearer Township roads	1,150	36	1,200	20	gravel	280	6	
83	Croft Township road			80	12	gravel	60	6	
84	Dalton Township roads								
85	Dalton and Rama boundary								
86	Darling Township road					gravel	70	10	
87	Dawson Township roads	200	44	110	24				20
88	Denbigh Township road								
89	Denison Township road	960	14						
90	Dowling Township roads	40	20						30
91	Dryden Township roads								135
92	Dummer Township roads								
93	Dungannon Township roads	50	40	50	20	gravel	50	7	20
94	Dunnet Township roads								
95	Dymond Township roads	180	20	280	20	gravel	240	7	220
96	Eastnor Township road	50	66	50	66				50
97	Elzevir Township road								
98	Elzevir Township drainage								50
99	Ennismore Township roads								
100	Faraday Township roads								
101	Fenwick Township roads	150	33	176	20	gravel	12	6	
102	Feronia to Widdifield road	240	66	320	26				





## DEPARTMENT OF LANDS AND FORESTS, ONTARIO,

ANNUAL STATE

NUMBER	NAME OF WORK	NEW CONSTRUCTION							DITCHED
		Cleared and Stumped		Graded and Shaped		SURFACED			
		Length, rods	Width, feet	Length, rods	Width, feet	Material	Length, rods	Width, feet	
103	Ferris, Astorville to Callander .....	.....	.....	.....	.....	.....	.....	.....	15
104	Ferris Township roads .....	.....	.....	.....	.....	.....	.....	.....	.....
105	Field and Bastedo Township roads..	.....	.....	.....	.....	.....	.....	.....	.....
106	Firstbrook Township roads .....	.....	.....	.....	.....	.....	.....	.....	.....
107	Foley Township roads .....	.....	.....	.....	.....	.....	.....	.....	.....
108	Freeman Township road .....	640	60	640	20	cinders	640	10	.....
109	Frontenac Trunk road, drainage .....	.....	.....	.....	.....	.....	.....	.....	400
110	Galbraith Township roads .....	100	40	100	20	earth	40	6	.....
111	Galbraith and Aberdeen road .....	.....	.....	.....	.....	.....	.....	.....	.....
112	Galbraith Township roads .....	.....	.....	.....	.....	.....	.....	.....	.....
113	Garson Township road .....	.....	.....	.....	.....	.....	.....	.....	50
114	Gibbons and Crerar road .....	.....	.....	.....	.....	.....	.....	.....	.....
115	Gladstone Township road .....	.....	.....	.....	.....	.....	.....	.....	.....
116	Gladstone and Parkinson road .....	.....	.....	.....	.....	.....	.....	.....	.....
117	Glamorgan Township roads .....	.....	.....	.....	.....	.....	.....	.....	120
118	Glamorgan and Monmouth road .....	.....	.....	.....	.....	.....	.....	.....	.....
119	Gordon Township roads .....	.....	.....	.....	.....	.....	.....	.....	.....
120	Gordon Township drainage .....	.....	.....	.....	.....	.....	.....	.....	1,020
121	Gould Township road .....	160	24	120	16	.....	.....	.....	.....
122	Grattan Township roads .....	.....	.....	.....	.....	.....	.....	.....	26
123	Griffith and Matawatchan Twp. roads.	.....	.....	.....	.....	.....	.....	.....	19
124	Gurd Township roads .....	.....	.....	.....	.....	.....	.....	.....	.....
125	Hagar Township roads .....	580	30	520	18	.....	.....	.....	960
126	Hagar and Loughrin Boundary road.	90	60	90	9	.....	.....	.....	.....
127	Hagar, St. Charles road .....	.....	.....	.....	.....	.....	.....	.....	50
128	Hagarty Township roads .....	75	66	75	20	.....	.....	.....	.....
129	Hallam Township roads .....	80	40	80	40	gravel	80	6	.....
130	Hagerman Township roads .....	.....	.....	.....	.....	.....	.....	.....	.....
131	Harley Township roads .....	.....	.....	320	24	.....	.....	.....	460
132	Harley and Dymond townline .....	.....	.....	.....	.....	.....	.....	.....	.....
133	Harley and Dymond townline .....	320	30	240	24	earth	320	8	.....
134	Harley and Casey townline .....	.....	.....	.....	.....	.....	.....	.....	.....
135	Harley and Kerns townline .....	.....	.....	.....	.....	.....	.....	.....	.....
136	Harris Township roads .....	.....	.....	.....	.....	.....	.....	.....	30
137	Harris and Casey townline .....	.....	.....	.....	.....	.....	.....	.....	143
138	Harris and Dymond boundary .....	.....	.....	.....	.....	.....	.....	.....	100
139	Harrow and May townline .....	.....	.....	.....	.....	.....	.....	.....	.....
140	Hanmer Township roads .....	.....	.....	.....	.....	.....	.....	.....	.....
141	Harvey Township roads .....	.....	.....	.....	.....	.....	.....	.....	.....
142	Head, Clara and Maria Twp. road....	.....	.....	.....	.....	.....	.....	.....	.....
143	Henwood Township roads .....	30	30	260	22	.....	.....	.....	196
144	Hilliard Township roads .....	140	42	320	28	clay	30	7	325
145	Hilliard and Armstrong Boundary ..	.....	.....	.....	.....	.....	.....	.....	.....
146	Hilliard and Ingram Boundary .....	.....	.....	.....	.....	.....	.....	.....	112
147	Himsworth North Township roads ..	160	30	320	14	gravel	240	7	38
148	Himsworth North Nipissing road ....	40	30	180	14	.....	.....	.....	50
149	Himsworth South Township roads...	160	30	80	14	.....	.....	.....	38
150	Hinchinbrooke Township road .....	.....	.....	.....	.....	.....	.....	.....	7
151	Horton Township roads .....	.....	.....	.....	.....	.....	.....	.....	.....
152	Howe Island roads .....	.....	.....	.....	.....	.....	.....	.....	115
153	Howland Township road .....	.....	.....	.....	.....	.....	.....	.....	.....

## COLONIZATION ROADS BRANCH.—Continued.

MENT, 1919-1920.

BRIDGES					CULVERTS		CUT AND FILL		MAINTENANCE										
							Side- Brushed		Graded and Shaped		SURFACED								
Number	Span	Material	Number	Material	Material	Cubic yards	Length, rods	Width, feet	Length, rods	Width, feet	Material	Length, rods	Width, feet	MILEAGE	EXPENDITURE	NUMBER			
			8	wood	stone	300	320	10	710	16	gravel	240	7	.75	\$ 436 25	103			
			4	cedar	stone	90			200	16	gravel	228	7	4.00	1,585 25	104			
1	30	timb'r	6	wood	gravel	12			480	12	gravel	375	7	.65	199 10	105			
				stone	stone						gravel	497	7	2.10	2,001 79	106			
			6	stone	earth	65	95	20	248	14	gravel	300	7	1.60	912 00	107			
			3	wood	stone	1,160	80	16	110	20	gravel	430	5	2.00	1,395 50	108			
							160	16	320	20	gravel	175	5	1.50	3,000 00	109			
			2	cedar			150	30	320	15	gravel	192	7	2.00	1,809 24	110			
			2	wood					320	15	gravel	320	8	1.00	400 67	111			
			6	plank					1,000	18	gravel	200	6	1.25	450 50	112			
											gravel	240	5	1.00	202 11	113			
			3	wood	earth	100			1,280	22	gravel	600	6	3.25	673 99	114			
			13	wood			365	8	536	16	gravel	110	7	.75	346 62	115			
							160	10			earth	120	8	4.00	1,301 75	116			
			6	metal	stone	50			125	24	gravel	631	6	2.00	600 00	117			
			1	wood										.50	400 00	118			
1	125	log												2.50	1,376 00	119			
					earth	250								3.20	740 00	120			
			5	cedar	stone	321	260	40	920	12	gravel	185		.50	400 00	121			
			28	cedar			395	30	1,484	18				3.25	805 48	122			
			4	cedar			15	20	240	14	earth	240	6	5.00	1,223 75	123			
			3	cedar					500	16				.75	301 85	124			
														4.00	1,104 59	125			
														.28	148 35	126			
			3	wood	rock	30			104	12				.33	400 00	127			
			4	wood	gravel	600			520	18	gravel	670	7	3.00	1,124 00	128			
			5	wood	earth	1,803	70	10	1,280	16	gravel	340	6	5.00	2,476 50	129			
			7	cedar					200	12	gravel	150	7	.75	300 00	130			
			1	wood	clay	4,214			570	16	gravel	398	7	5.00	2,675 68	131			
					gravel	110			320	26	gravel	140	7	1.00	700 00	132			
														1.00	400 00	133			
									170	26				.53	400 00	134			
									320	26				1.00	400 00	135			
			4	cedar	clay	1,297			680	24	gravel	803	8	3.50	3,095 82	136			
											gravel	30	7	.50	350 00	137			
			1	wood					110	26	gravel	320	7	1.00	849 80	138			
											gravel	90	6	.28	300 50	139			
			3	wood					900	24				3.00	500 00	140			
							780	10	203	18	gravel	327	7	2.25	606 50	141			
									280	16				.88	399 14	142			
3	16	wood	5	wood	clay	385	25	40	1,998	24	gravel	130	7	7.50	2,963 36	143			
			6	wood					750	24	gravel	177	7	4.00	2,410 53	144			
			1	wood							gravel	280	7	.88	605 03	145			
							112	12			gravel	100	7	.63	697 07	146			
			11	cedar	earth	60	640	14	240	14	gravel	320	6	3.25	703 88	147			
			8	cedar			320	14	160	14	gravel	320	7	1.00	300 00	148			
			4	cedar			480	14	80	14	gravel	160	6	2.00	553 55	149			
			1	stone			20	20			gravel	180	8	.55	300 00	150			
									300	16	gravel	200	8	1.00	275 00	151			
					earth	80					C. stone	235	8	.75	475 00	152			
					stone	200			30	7	gravel	30	7	.13	401 85	153			



## COLONIZATION ROADS BRANCH.—Continued.

MENT, 1919-1920.

BRIDGES			CULVERTS		CUT AND FILL		MAINTENANCE						MILEAGE	EXPENDITURE	NUMBER	
Number	Span	Material	Number	Material	Material	Cubic yards	Side- Brushed	Graded and Shaped	SURFACED		Length, rods	Width, feet				
1	16	wood	8	rock wood	stone clay	350 1,474	320	5	1,600	24	gravel	140	6	.50	\$	c.
			11	plank					320	24	gravel	480	7	6.25	2,450	75
			7	cedar			265	20	1,050	18	gravel	50	6	1.50	1,001	02
									320	16	gravel	270	6	4.25	1,999	87
									200	16	gravel	200	7	1.00	898	82
									100	14	gravel	100	7	.63	400	50
									160	20	gravel	90	5	.31	300	00
									100	22	gravel	270	5	.50	300	00
2	14	cedar	1	wood	earth	422								1.50	944	64
					stone	28								.12	150	00
					stone	64			800	14	gravel	160	5	3.00	307	50
			12	wood			60	15	442	16	gravel	344	9	4.00	1,004	60
							20	30	34	15	gravel	340	5	1.10	400	62
			10	wood	earth				350	14	gravel	150	6	1.25	1,000	00
			3	wood	earth	1,774					gravel	590	7	3.00	2,049	54
											gravel	160	7	.50	600	00
											gravel	207	7	.63	800	00
									240	24	gravel	145	7	.75	399	95
1	14	cedar	2	wood	earth	200	50	30	200	24	gravel	180	5	1.00	550	50
			8	cedar	stone	60	100	20	900	16	gravel	510	7	3.25	3,001	65
			3	stone	stone	65	25	10	104	18	gravel	164	6	.75	506	65
			4	metal	stone	80	105	20	130	20	gravel	179	7	.75	502	85
1	16	wood			earth	100								.03	448	99
					earth	744			160	20	gravel	245	6	1.00	799	97
							80	20	120	14	gravel	80	7	.50	306	75
									40	16	gravel	170	5	.60	500	00
														.63	207	25
			5	tile	stone	177			331	14	gravel	420	5	1.50	599	95
					stone	50			340	14	gravel	136	9	1.20	299	43
			22	wood	earth	135			90	22	gravel	240	6	3.75	1,175	00
														2.00	280	51
1	11	wood	11	wood	stone	15			200	20	gravel	40	6	.75	593	53
			5	wood	earth	50								.75	99	53
			1	cedar					40	18	gravel	40	7	.25	203	40
			2	cedar			480	20	640	12				2.00	500	00
			4	wood			40	20	250	16				1.00	301	00
			6	wood	stone	70	116	15	304	16	gravel	361	6	2.00	920	42
					rock	15			320	16	gravel	10	8	1.00	450	00
			1	cedar					160	16	gravel	217	6	.75	604	06
			1	cedar			100	16	100	16				.31	300	80
			1	cedar					120	16	gravel	120	7	.37	299	70
					clay	649			915	18	gravel	101	6	3.00	791	37
														.58	197	15
					rock	8								.57	591	20
			5	wood					2,800	14	gravel	300	6	10.00	1,299	47
														1.50	227	26
			5	wood					145	16	gravel	140	10	.90	799	62
											gravel	110	6	.38	401	37
					earth	40			80	24	gravel	60	6	.25	258	33
			2	cedar					200	14	gravel	160	7	1.00	509	50
					clay	1,902			8	22	gravel	194	7	.75	913	30



DEPARTMENT OF LANDS AND FORESTS, ONTARIO,  
ANNUAL STATE

NUMBER	NAME OF WORK	NEW CONSTRUCTION							DITCHED
		Cleared and Stumped		Graded and Shaped		SURFACED			
		Length, rods	Width, feet	Length, rods	Width, feet	Material	Length, rods	Width, feet	
205	Medonte Township drainage .....								40
206	Medora Township roads .....								200
207	Medora and Wood Township road .....								
208	Merritt Township roads .....	160	25	160	16				10
209	Mills Township roads (Manitoulin) ..								
210	Mills Township roads (Parry Sound) ..	200	30	320	12	earth	249	12	
211	Mills and Hardy Township road .....								18
212	Minden Township road .....								
213	Minden and Somerville Twp. road .....								
214	Monck Township road .....	200	50	100	20	earth	100	20	
215	Monteagle Township roads .....								
216	Monteith Township road .....								
217	Morgan Township roads .....	80	30	80	12	clay	80	8	600
218	Morrison Township road .....								
219	Murchison Township road .....								
220	Muskoka Township roads .....	320	45	540	20	gravel	60	10	
221	Muskoka District drainage .....								200
222	Macaulay and Draper townline .....								200
223	McDonald Township road .....								
224	McDonald, Kehoe and Meredith road ..								
225	Meredith and Aberdeen Add'l road .....								
226	McDougal Township drainage .....								40
227	McKenzie Township road .....								
228	McKenzie and Burton Twp. road .....	160	12	400	12	earth	400	12	
229	McKim Township roads .....	25	30	25	30				
230	McKinnon and Harrow Twp. road .....	100	50	100	35	earth	50	6	20
231	McLean and Ridout Township roads .....								
232	McMurrich Township roads .....								
233	McMurrich and Perry Township roads ..								
234	McNab Township roads .....	32	12	32	12	gravel	32	6	70
235	MacPherson Township roads .....								184
236	MacPherson Township Boundary Rd. ....			364	16	gravel	45	6	826
237	MacPherson and Caldwell Twp. road .....								
238	MacPherson and London Twp. road .....	700	36	700	18	gravel	35	6	28
239	Nipissing Township roads .....	460	40	280	18				280
240	Nipissing and Gurd Twps., Alsace rd. ..	100	40	100	16				
241	North Algona Township roads .....								
242	Oakley Township road .....								
243	Oakley and Draper townline .....								
244	Olden Township roads .....	65	40	30	40				
245	Orillia Township roads .....								
246	Orillia Township drainage .....								80
247	Orillia and Matchedash road .....								
248	Orillia and Matchedash Twp. drainage ..								80
249	Oro Township roads .....								
250	Oro and Medonte Township road .....								
251	Oro and Medonte Township drainage .....								160
252	Oso and Bedford road .....								
253	Oso and Olden road .....								
254	Pakenham Township road .....	320	18						320
255	Palmerston Township roads .....								

COLONIZATION ROADS BRANCH.—Continued.

MENT, 1919-1920.

BRIDGES			CULVERTS		CUT AND FILL		MAINTENANCE						MILEAGE	EXPENDITURE	NUMBER
Number	Span	Material	Number	Material	Material	Cubic yards	Side-Brushed		Graded and Shaped		SURFACED				
							Length, rods	Width, feet	Length, rods	Width, feet	Material	Length, rods	Width, feet		
			1	cement							gravel	22	7	.25	\$ 300 85
			5	stone	stone	20	20	25	400	20	earth	200	12	1.25	399 00
1	18	cedar	6	metal	rock	30	480	30	400	20	earth	250	20	1.50	988 36
			26	wood	earth	155	150	16	250	16	gravel	160	5	2.00	764 66
			3	wood	stone	12	60	40	610	16	gravel	525	6	3.00	1,077 00
			5	cedar										1.25	450 00
									160	12	gravel	40	7	.50	200 00
			9	wood	stone	50	325	20	720	16	gravel	94	3	3.00	599 90
			4	wood	rock	5	165	20	535	16	earth	245	6	2.25	499 87
			5	cedar	earth	30								.63	490 73
			10	cedar					420	14	gravel	260	7	1.75	912 17
			7	cedar			400	20			gravel	260	7	1.25	208 50
			4	wood	rock	375			360	16	gravel	360	8	1.50	1,101 63
									1,300	20	gravel	240	10	4.50	500 00
1	16	wood	5	wood					400	16				1.25	500 00
			8	metal										1.75	698 67
1	12	cedar	3	wood	rock	120								.63	743 17
			8	cedar	stone	40	600	25	700	20	gravel	700	10	2.50	2,996 91
											gravel	75	5	.24	200 00
					earth	40			200	22	gravel	60	5	.75	303 25
					earth	40			100	24	gravel	120	5	.50	398 06
					rock	8								.13	175 00
			7	cedar					240	12	gravel	240	6	.75	349 87
			7	cedar										1.25	305 75
									960	20	gravel	960	10	3.08	675 00
			1	wood										.40	500 60
			7	cedar					1,040	20	gravel	500	10	3.50	498 23
					rock	2			80	14	gravel	80	6	.25	203 50
			5	wood			400	10			gravel	700	10	2.50	2,001 40
2	12	wood			stone	9.	25	15	18	12	gravel	243	6	1.00	500 00
			28	wood					2,620	20	gravel	2,720	6	10.00	3,000 00
			15	wood					650	18	gravel	140	6	3.25	1,498 88
			13	cedar					1,275	18	gravel	700	6	4.50	2,000 00
			12	cedar										2.50	497 51
			10	cedar					320	16				3.10	1,310 67
			2	wood										.31	359 85
							70	33	70	15	gravel	137	10	.75	499 84
			5	cedar	stone	60	30	10	625	20	gravel	90	5	2.00	499 90
			6	wood			60	25	200	20	gravel	900	10	3.00	1,999 31
					earth	40			100	12	gravel	60	5	.75	418 65
							232	36	245	22	gravel	177	6	1.25	606 36
			3	metal	gravel	30								.25	179 70
							212	18	82	18	gravel	41	6	.75	395 75
			1	cedar			200	18						.63	98 58
									40	18	gravel	59	8	.25	212 35
					earth	920								.05	400 00
														.50	100 00
									80	12	gravel	87	10	.30	300 00
					stone	27	105	10	200	14	gravel	88	8	.75	199 79
					stone	200	320	10	380	18	gravel	360	8	3.50	909 00
			1	stone	stone	278			10	14	gravel	280	8	1.00	660 35





## COLONIZATION ROADS BRANCH.—Continued.

MENT, 1919-1920.

BRIDGES			CULVERTS		CUT AND FILL		MAINTENANCE						MILEAGE	EXPENDITURE	NUMBER
Number	Span	Material	Number	Material	Material	Cubic yards	Side- Brushed		Graded and Shaped		SURFACED				
							Length, rods	Width, feet	Length, rods	Width, feet	Material	Length, rods	Width, feet		
.....	.....	.....	1	stone	stone	18	180	10	280	14	gravel	470	8	1.75	1,102 93 256
.....	.....	.....	7	wood	.....	.....	.....	.....	520	16	gravel	200	8	2.25	1,299 13 257
.....	.....	.....	.....	.....	.....	.....	.....	.....	1,120	14	gravel	560	6	3.50	1,528 25 258
.....	.....	.....	4	wood	earth	1,365	100	25	160	12	gravel	240	6	.75	300 00 259
.....	.....	.....	.....	.....	.....	.....	.....	.....	170	20	gravel	154	6	.75	698 59 260
1 12	cedar	.....	7	cedar	stone	20	240	20	411	16	gravel	241	8	1.30	600 00 261
.....	.....	.....	1	stone	.....	.....	150	33	140	12	sand	140	8	1.00	677 24 262
.....	.....	.....	9	wood	.....	.....	.....	.....	261	18	gravel	121	8	1.00	700 00 263
.....	.....	.....	.....	.....	earth	150	.....	.....	.....	.....	.....	.....	.....	1.13	501 01 264
.....	.....	.....	5	wood	earth	444	.....	.....	160	20	gravel	290	5	1.00	701 35 265
1 re	paired	.....	.....	.....	.....	.....	240	20	.....	.....	gravel	170	6	.75	1,602 65 266
1 10	plank	.....	14	cedar	.....	.....	640	12	480	10	gravel	80	7	1.50	400 00 267
.....	.....	.....	7	cedar	.....	.....	187	35	865	12	.....	.....	.....	2.75	699 49 268
.....	.....	.....	.....	.....	rock	410	194	15	1,120	17	gravel	45	6	3.50	710 04 269
.....	.....	.....	.....	.....	.....	.....	.....	.....	23	18	gravel	157	6	.75	998 67 270
.....	.....	.....	.....	.....	.....	.....	.....	.....	45	20	C. stone	378	6	1.20	375 00 271
.....	.....	.....	5	wood	.....	.....	63	30	151	20	sand	140	18	.75	900 00 272
.....	.....	.....	.....	.....	gravel	80	25	12	90	20	gravel	125	6	1.50	1,139 95 273
1 10	cedar	.....	2	metal	.....	.....	320	30	640	18	.....	.....	.....	2.00	199 00 274
.....	.....	.....	2	cedar	clay	32	.....	.....	200	16	gravel	100	8	1.00	800 00 275
.....	.....	.....	2	cedar	.....	.....	.....	.....	800	20	gravel	60	10	2.50	999 80 276
.....	.....	.....	2	metal	gravel	320	.....	.....	.....	.....	gravel	320	7	1.75	800 68 277
.....	.....	.....	1	cedar	stone	225	.....	.....	.....	.....	.....	.....	.....	.10	500 00 278
.....	.....	.....	4	wood	.....	.....	.....	.....	450	16	gravel	10	8	1.50	450 00 279
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	gravel	220	5	1.69	550 40 280
.....	.....	.....	.....	.....	stone	500	.....	.....	60	22	gravel	475	6	1.50	999 99 281
2 13	cedar	.....	13	cedar	stone	27	240	20	1,360	12	gravel	270	6	4.70	807 25 282
.....	.....	.....	2	wood	earth	500	.....	.....	560	20	gravel	70	6	1.75	698 72 283
.....	.....	.....	1	concrete	stone	120	.....	.....	30	19	gravel	346	7	1.20	350 00 284
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.28	196 87 285
.....	.....	.....	5	cedar	gravel	593	720	12	960	12	gravel	654	8	5.25	914 20 286
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	C. stone	176	6	.55	306 00 287
.....	.....	.....	7	cedar	clay	40	150	20	595	14	gravel	441	8	2.75	1,199 00 288
.....	.....	.....	3	wood	.....	.....	560	16	560	18	gravel	200	5	2.00	500 00 289
.....	.....	.....	4	cedar	.....	.....	40	30	160	7	gravel	480	6	1.50	551 50 290
.....	.....	.....	6	plank	.....	.....	.....	.....	790	14	gravel	650	6	4.25	2,112 05 291
.....	.....	.....	.....	.....	.....	.....	.....	.....	280	30	gravel	211	6	1.00	600 00 292
.....	.....	.....	2	stone	stone	72	.....	.....	.....	.....	.....	.....	.....	.50	401 48 293
.....	.....	.....	3	stone	stone	36	.....	.....	900	18	gravel	500	10	3.00	1,000 00 294
.....	.....	.....	11	wood	stone	70	700	25	880	20	earth	310	16	2.85	908 25 295
.....	.....	.....	3	metal	.....	.....	10	20	.....	.....	gravel	430	8	1.25	300 00 296
.....	.....	.....	7	wood	.....	.....	80	20	250	18	gravel	90	6	1.50	801 25 297
.....	.....	.....	10	cedar	.....	.....	20	15	30	16	gravel	70	6	.50	550 00 298
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	gravel	250	7	.78	400 00 299
.....	.....	.....	1	cedar	stone	10	.....	.....	240	22	gravel	140	5	.75	350 00 300
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.38	199 90 301
.....	.....	.....	.....	.....	clay	135	.....	.....	274	22	R. clay	291	7	1.00	497 30 302
.....	.....	.....	1	cement	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.43	375 00 303
.....	.....	.....	3	rock	stone	50	70	16	170	24	gravel	440	6	2.75	1,099 65 304
.....	.....	.....	1	wood	stone	800	.....	.....	40	23	gravel	70	5	.25	398 92 305
.....	.....	.....	.....	.....	.....	.....	127	20	127	24	gravel	163	6	.75	503 75 306



## DEPARTMENT OF LANDS AND FORESTS, ONTARIO,

ANNUAL STATE

NUMBER	NAME OF WORK	NEW CONSTRUCTION							DITCHED
		Cleared and Stumped		Graded and Shaped		SURFACED			
		Length, rods	Width, feet	Length, rods	Width, feet	Material	Length, rods	Width, feet	
307	Tiny Township roads . . . . .								240
308	Tudhope Township roads . . . . .	198	40	198	12	clay	400	7	198
309	Tudor and Cashel Township road . . . . .								
310	Tyendinaga Township roads . . . . .								
311	VanHorne Township roads . . . . .								
312	Vankoughnet Township roads . . . . .	270	36	282	22				204
313	Verulam and Somerville Twp. road . . . . .								
314	Vespra Township roads . . . . .								
315	Wallbridge Township roads . . . . .	20	30	150	60	gravel	150	6	60
316	Wainwright Township Culvert . . . . .								
317	Waters Township roads . . . . .								
318	Wells Township roads . . . . .								
319	Westmeath Township roads . . . . .			30	35	gravel	35	12	
320	Widdifield Township roads . . . . .								77
321	Wilberforce Township roads . . . . .	103	28	100	21	gravel	20	8	60
322	Wollaston Township roads . . . . .								
323	Wylie Township roads . . . . .								80
324	Beckwith Township roads . . . . .								
	Total . . . . .	23,103		22,014			7,297		21,163

COLONIZATION ROADS BRANCH.—*Concluded.*

MENT, 1919-1920.

BRIDGES			CULVERTS		CUT AND FILL		Side- Brushed		Graded and Shaped		SURFACED								
Number	Span	Material	Number	Material	Material	Cubic yards	Length, rods	Width, feet	Length, rods	Width, feet	Material	Length, rods	Width, feet		MILEAGE	EXPENDITURE	NUMBER		
...	...	...	1	wood	earth	50	...	...	...	...	gravel	170	6	1.28		\$ 594 40 307			
...	...	...	1	cedar	stone	100	...	...	400	14	gravel	160	7	1.62		1,024 80 308			
...	...	...	...	...	...	...	...	...	240	16	gravel	160	7	1.25		500 99 309			
...	...	...	...	...	...	...	...	...	...	...	gravel	160	7	.75		301 95 310			
...	...	...	8	cedar	sand	1,570	183	12	880	20	gravel	600	5	1.88		908 25 311			
...	...	...	...	...	...	...	...	...	...	...	gravel	193	6	4.50		2,200 00 312			
...	...	...	...	...	...	...	...	...	...	...	C. stone	376	6	1.17		300 00 313			
...	...	...	...	...	...	...	...	...	...	...	gravel	542	7	1.70		500 72 314			
...	...	...	3	plank	...	...	...	...	...	...	...	...	...	...		.50	428 92 315		
...	...	...	1	wood	...	...	...	...	...	...	...	...	...	...		.01	12 00 316		
...	...	...	1	wood	earth	300	...	...	20	10	gravel	320	6	1.07		358 15 317			
...	...	...	...	...	...	...	160	20	320	20	gravel	300	5	1.00		606 07 318			
...	...	...	1	concrete	gravel	100	...	...	29	19	gravel	70	6	.35		800 00 319			
...	...	...	9	wood	...	...	...	...	498	18	gravel	370	8	2.00		1,114 69 320			
...	...	...	11	metal	...	...	560	30	710	16	gravel	737	8	5.10		1,945 00 321			
...	...	...	...	...	...	...	40	20	160	14	gravel	160	7	.50		298 47 322			
...	...	...	...	...	...	...	...	...	160	20	gravel	60	12	.50		300 00 323			
...	...	...	...	...	...	...	...	...	...	...	gravel	100	7	.30		375 00 324			
33	...	...	1064	...	...	44,974	21355	...	100811	...	...	71,768	...	582.02		265,993 05			

## SCHEDULE SHOWING THE AMOUNT OF WORK OF ROAD CONSTRUCTION.

NUMBER	TOWNSHIPS	CLEARED AND STUMPED		GRADED		SURFACED		
		Length, rods	Width, feet	Length, rods	Width, feet	Material	Length, rods	Width, feet
1	Admaston By-law No. 240 .....	.....	.....	1,235	15	gravel	450	8
2	Alberton By-law No. 1 .....	312	66	312	16	gravel	674	6
3	Alice & Fraser By-law No. 5 .....	380	24	248	16	gravel	260	7
4	Amabel By-law No. 235 .....	.....	.....	510	18	gravel	1,010	6
5	Assiginack By-law No. 427 .....	.....	.....	2,500	16	gravel	2,600	5
6	Atwood By-law No. 105 .....	340	66	48	30	gravel	294	5
7	Bagot & Blythfield By-law No. 334....	300	30	1,000	16	gravel	1,000	5
8	Belmont & Methuen By-law 614.....	.....	.....	171	16	C. stone	336	8
9	Billings By-law No. 252 .....	.....	.....	810	16	gravel	495	7
10	Blezard By-law No. 112 .....	.....	.....	1,280	16	gravel	640	6
11	Blue By-law No. 48 .....	351	66	448	16	gravel	120	5
12	Brethour By-law No. 16 .....	.....	.....	3,572	24	gravel	952	6
13	Bromley By-law No. 294 .....	.....	.....	2,047	16	gravel	1,348	6
14	Brougham By-law No. 412 .....	.....	.....	222	12	gravel	222	6
15	Brudenell & Lyndoch By-law No. 251..	.....	.....	1,740	16	gravel	80	6
16	Bucke By-law No. 233 .....	80	10	480	16	stone	915	6
17	Burleigh & Anstruther By-law No. 1..	.....	.....	61	16	gravel	162	6
18	Burpee By-law No. 105 .....	.....	.....	250	24	gravel	250	6
19	Camden By-law No. 497 .....	.....	.....	.....	.....	gravel	640	6
20	Caldwell By-law No. 282 .....	.....	.....	3,350	16	gravel	2,095	6
21	Cardiff By-law No. 548 .....	1,035	10	1,265	16	gravel	108	5
22	Carlow By-law No. 113 .....	280	20	760	14	gravel	480	6
23	Casey By-law No. 57 .....	.....	.....	3,460	22	gravel	208	7
24	Casimir, Jennings & Appleby By-law No. 87 .....	.....	.....	910	14	gravel	340	6
25	Chamberlain By-law No. 64 .....	.....	.....	440	20	gravel	60	8
26	Chapple By-law No. 265 .....	870	66	1,720	16	gravel	1,740	6
27	Chapman By-law No. 7 .....	.....	.....	661	16	gravel	1,061	6
28	Chisholm By-law No. 103 .....	.....	.....	.....	.....	gravel	225	7
29	Connree By-law No. 48 .....	160	40	398	16	.....	.....	.....
30	Cosby & Mason By-law No. 47 .....	.....	.....	3,480	14	gravel	360	7
31	Dilke By-law No. 93 .....	110	20	154	16	gravel	260	7
32	Draper By-law No. 390 .....	.....	.....	2,640	14	gravel	1,418	5
33	Drury, Denison & Graham By-law No. 191 .....	1,280	16	4,280	16	gravel	3,735	6
34	Dummer By-law No. 879 .....	.....	.....	2,776	15	gravel	431	8
35	Dungannon By-law No. 90 .....	40	20	480	14	gravel	60	7
36	Dymond By-law No. 192 .....	.....	.....	9,915	16	gravel	984	5
37	Dysart By-law No. 623 .....	3,373	16	2,088	14	gravel	2,234	5
38	Eastnor By-law No. 25 .....	350	66	350	28	.....	.....	.....
39	Eldon By-law No. 494 .....	.....	.....	537	16	gravel	615	5
40	Elzevir & Grimsthorpe By-law No. 48A.	.....	.....	320	16	gravel	480	6
41	Emo By-law No. 238 .....	1,895	20	125	20	gravel	1,766	6
42	Ferris By-law No. 584 .....	.....	.....	1,270	14	gravel	170	6
43	Front of Leeds & Lansdowne By-law 750 .....	.....	.....	211	16	gravel	1,229	6
44	Front of Yonge By-law No. 102 .....	.....	.....	205	9	.....	.....	.....
45	Grattan By-law No. 277 .....	330	16	813	16	gravel	865	5
46	Gordon By-law No. 162 .....	.....	.....	710	24	gravel	1,245	7
47	Hanmer By-law No. 100 .....	.....	.....	4,800	20	.....	.....	.....
48	Harley By-law No. 254 .....	.....	.....	4,720	16	gravel	868	7
49	Harley By-law No. 239 .....	.....	.....	4,940	20	gravel	973	6
50	Harris By-law No. 68 .....	.....	.....	680	16	gravel	460	5
51	Harvey By-law No. 360 .....	6	10	1,538	16	gravel	818	5
52	Hilliard By-law No. 116 .....	.....	.....	3,350	24	gravel	795	7
53	Hilton By-law No. 405 .....	153	16	278	20	gravel	185	5

## COLONIZATION ROADS BRANCH, MUNICIPAL BY-LAWS, 1920.

DITCHED	CUT OR FILL		BRIDGES			CULVERTS						
Length, rods	Material	Amount in cu. yds.	Number	Span, feet	Material	Number	Material	NEW ROAD MILEAGE	OLD ROAD MILEAGE	GOVERNMENT EXPENDITURE	NUMBER	
									4.00	\$ c.		
						5	wood	1.00	2.50	945 00	1	
	stone	25	4	24	cedar	2	cedar		3.00	979 12	2	
						1	concrete		5.00	662 36	3	
						17	wood		9.00	1,604 47	4	
						1	wood	1.07	1.00	2,500 00	5	
										1,187 50	6	
										1,350 00	7	
						1	cedar		2.00	450 00	8	
	earth	50				9	wood		6.00	700 00	9	
									5.00	300 00	10	
50						2	wood	1.10	2.00	762 50	11	
80	earth	665	1	15	wood	7	wood		12.00	2,363 09	12	
185	clay	261	1	33	cedar	21	cedar		8.00	2,300 00	13	
						1	cedar		1.00	300 00	14	
	stone	40	1	21	cedar	16	cedar		7.00	899 98	15	
99	clay	709				6	wood		4.00	2,249 50	16	
						1	wood		.75	270 00	17	
	stone	30							1.50	300 00	18	
									2.00	500 00	19	
						8	wood		12.00	1,899 98	20	
121						28	cedar		4.00	970 00	21	
						8	cedar		3.00	624 33	22	
2,500	earth	160	5	repair ed		16	wood	1.00	11.00	1,683 73	23	
						6	wood		5.00	850 00	24	
			2	27	wood	19	wood		2.00	745 13	25	
310	earth	603	1	16	wood	14	wood	1.75	7.00	5,000 00	26	
						5	wood		4.00	653 37	27	
160									1.00	474 87	28	
198	earth	150				11	wood	.50	2.00	500 00	29	
						11	wood		11.00	625 00	30	
30								.25	1.00	699 96	31	
	rock	10	1	repair ed		35	wood		9.00	999 84	32	
3,418	rock	549	5	16	cedar	12	cedar	3.00	14.00	3,260 50	33	
						3	concrete		9.00	450 00	34	
	rock	50				4	cedar	.25	1.50	449 87	35	
508	earth	1,101	2	25	wood	28	wood		32.00	2,485 02	36	
211	stone	630	1	14	wood	38	wood		12.00	4,309 57	37	
700								1.10		1,600 00	38	
64	clay	74							2.00	683 81	39	
	earth	800				10	cedar		2.00	500 00	40	
68	earth	150	1	16	wood	25	wood		8.00	2,880 47	41	
						13	wood		4.00	500 00	42	
	stone	118				6	metal		4.00	1,200 00	43	
									.75	100 00	44	
310	earth	1,852				8	cedar		3.00	1,170 00	45	
						4	cedar		4.50	1,247 52	46	
580						11	wood		15.00	675 00	47	
450	earth	599				18	wood	.25	16.00	1,487 36	48	
2,080	earth	163	2	27	wood	5	wood		16.00	1,494 89	49	
518						9	wood		3.00	650 00	50	
									5.00	839 95	51	
715	earth	62	4	18	wood	4	wood		12.00	1,709 74	52	
						1	wood		1.00	200 00	53	





## COLONIZATION ROADS BRANCH, MUNICIPAL BY-LAWS, 1920.

DITCHED	CUT OR FILL		BRIDGES			CULVERTS					
Length, rods	Material	Amount in cu. yds.	Number	Span, feet	Material	Number	Material	NEW ROAD MILEAGE	OLD ROAD MILEAGE	GOVERNMENT EXPENDITURE	NUMBER
160	earth...	145				3	wood		4.00	1,400 00	54
	earth...	60	1	repair ed		8	C. iron.		2.00	878 82	55
600	stone...	10				2	wood		8.00	1,000 00	56
78						5	wood		3.00	600 00	57
									.50	225 00	58
						2	metal		1.50	324 82	59
						1	cedar		1.00	275 00	60
238	clay	40	1	16	timb'r	15	wood	.75	1.00	1,081 04	61
560	earth	100				4	wood		1.00	1,235 11	62
197	earth	200				8	wood		1.50	600 00	63
207	earth	225				1	tile		2.00	399 75	64
34	earth	60				1	cedar	30	.25	175 00	65
	stone	350							2.00	695 52	66
18			1	12	wood	2	wood		6.00	2,386 68	67
180	earth	30				3	wood		4.00	994 47	68
208	clay	627				3	wood	1.25	4.00	1,999 80	69
						5	cedar		1.00	400 00	70
	stone	20							3.00	1,250 00	71
	earth	200	1	12	cedar	13	wood		5.00	500 00	72
	earth	52				2	cedar		1.00	300 00	73
						1	cedar		3.00	599 02	74
	gravel	180				1	wood		4.00	1,250 00	75
						1	cement		2.00	750 00	76
						17	wood		18.00	998 83	77
						2	metal		3.00	612 47	78
						10	cedar		2.50	500 00	79
	stone	187				1	metal		2.00	745 37	80
						17	metal		10.00	1,070 00	81
46						24	wood		5.00	690 00	82
			1	12	wood	26	wood	.75	12.00	1,280 00	83
38			1	repair ed		20	wood		6.00	662 42	84
	stone	80				5	cedar		2.50	592 87	85
457	clay	676	1	12	timber	16	wood	3.50	4.00	2,750 00	86
	earth	60	4	12	wood	24	wood		15.00	1,000 00	87
50						1	wood		4.00	749 75	88
						16	wood		14.00	3,059 91	89
									2.13	500 00	90
1,000	earth	1,600				11	wood	2.00	3.00	3,099 50	91
						3	wood		10.00	1,999 42	92
									1.25	200 00	93
									2.00	599 12	94
66	earth	663	1	16	cedar	30	wood	1.00	6.00	1,889 58	95
303	stone	223	1	30	cedar	10	cedar		5.00	750 00	96
266	clay	400				8	cedar		5.00	1,250 00	97
10	earth	238				5	metal		6.00	2,100 00	98
	earth	1,488				3	metal		1.50	464 52	99
97	stone	107				13	wood		5.00	975 00	100
80						9	wood	.75	8.00	4,353 35	101
600	earth	190				18	metal	.25	4.00	1,000 00	102
140	earth	30							4.00	800 00	103
									1.00	750 00	104
85	earth	80				2	wood		2.00	388 00	105
	stone	639							2.50	1,119 95	106
85	stone	100				28	wood		3.00	1,000 00	107
	earth	200							.10	82 86	108

## SCHEDULE SHOWING THE AMOUNT OF WORK OF ROAD CONSTRUCTION.

NUMBER	TOWNSHIP	CLEARED AND STUMPED		GRADED		SURFACED		
		Length, Rods	Width, feet	Length, rods	Width, feet	Material	Length, Rods	Width, feet
109	Richmond By-law No. 668 .....			320	16	C. stone	640	12
110	Ridout By-law No. 39 .....			2,800	18	gravel	2,900	8
111	Ross By-law No. 370 .....			875	24	gravel	984	6
112	St. Edmunds By-law No. 242 .....					gravel	585	5
113	St. Joseph By-law No. 441 .....	320	20	195	20	gravel	1,361	7
114	Sandfield By-law No. 247 .....	20	12	30	22	gravel	570	6
115	Sarawak By-law No. 6 .....			172	16	gravel	1,018	7
116	Sebastopol By-law No. 299 .....	150	20	610	14	gravel	90	8
117	Sheffield By-law No. 650 .....			357	16	gravel	1,354	7
118	Sherborne By-law No. 286 .....	202	8	397	16	gravel	445	6
119	Sherwood Jones & Burns By-law No. 20 .....	685	30	845	14	gravel	421	8
120	Shuniah By-Law No. 452 .....	692	20	7,496	16	gravel	3,036	6
121	Snowdon By-law No. 203 .....	358	8	814	14	gravel	575	6
122	Somerville By-law No. 720 .....			184	16	gravel	383	5
123	South Crosby By-law No. 869 .....			286	16	gravel	629	5
124	Springer By-law No. 309 .....			5,480	16	gravel	213	5
125	Stafford By-law No. 699 .....			454	30	gravel	578	8
126	Stanhope By-law No. 359 .....	124	6	1,295	16	gravel	278	6
127	Stisted By-law No. 246 .....			1,000	20	gravel	130	10
128	Storrington By-law No. 483 .....			490	16	gravel	186	8
129	Strong By-law No. 411 .....			110	15	gravel	90	11
130	Sunnidale By-law No. 490 .....	70	8	499	18	clay	499	6
131	Tarbutt & Tarbutt Additional By-law No. 2A .....	35	12	95	20	gravel	575	6
132	Tarentorus By-law No. 198 .....	900	8	1,246	16	gravel	1,326	6
133	Tay By-law No. 786 .....			738	20	gravel	1,334	7
134	Thessalon By-law No. 11 .....	60	40	80	20	gravel	170	5
135	Thompson By-law No. 117 .....					gravel	352	5
136	Tiny By-law No. 607 .....			1,287	18	gravel	547	7
137	Tisdale By-law No. 208 .....			80	20	gravel	570	10
138	Tudor & Cashel By-law No. 8 .....	20	20	550	14	C. stone	600	7
139	Tyendinaga By-law No. 693 .....			480	16	gravel	280	7
140	Vespra By-law No. 629 .....			629	18	gravel	1,168	7
141	Watt By-law No. 535 .....	100	45	5,890	20	gravel	2,040	10
142	Westmeath By-law No. 240 .....					gravel	3,381	7
143	Widdifield By-law No. 300 .....	13	16	756	24	gravel	743	12
144	Wilberforce By-law No. 477 .....			647	18	gravel	702	7
145	Wolfe Island By-law No. 480 .....					C. stone	480	8
146	Wollaston By-law No. 2 .....	80	40	560	14	gravel	400	7
147	Worthington By-law No. 96 .....	320	66	133	28	gravel	75	5
Total .....		24,750	....	163,850	....	.....	109407	....

## COLONIZATION ROADS BRANCH, MUNICIPAL BY-LAWS, 1920.

DITCHED	CUT OR FILL		BRIDGES			CULVERTS		NEW ROAD MILEAGE	OLD ROAD MILEAGE	GOVERNMENT EXPENDITURE	NUMBER
	Material	Amount in cu. yds.	Number	Span, feet	Material	Number	Material				
Length, rods											
.....									2.00	2,000 00	109
.....	earth...	164				2	wood...		9.10	1,600 00	110
.....						2	metal...		4.50	1,350 00	111
100	earth...	22							2.00	500 00	112
.....									5.00	1,600 00	113
.....	earth...	172	3	repaired		2	wood...		2.00	500 00	114
.....						3	metal...		4.00	1,500 00	115
.....									2.00	300 00	116
.....						8	wood...		5.00	992 55	117
27						9	cedar...		2.50	826 10	118
380						5	cedar...	1.00	2.00	900 00	119
285	earth...	1,066	2	19	plank	17	wood...	.50	25.00	3,850 00	120
40	earth...	90				17	wood...		3.00	690 00	121
18	stone...	10	1	12	cem't	9	wood...		1.50	686 45	122
.....									2.00	404 91	123
.....									18.00	555 52	124
.....	stone...	80						2.00	2.00	540 00	125
.....						9	wood...		4.50	438 44	126
.....						3	wood...		4.00	200 00	127
325	earth...	50				3	metal...		1.75	725 75	128
.....	stone...	300				4	wood...		1.00	229 54	129
397						2	cedar...		1.60	600 00	130
60						1	wood...		2.00	499 37	131
72	earth...	1,974	2	57	cedar.	4	metal ..	.25	4.50	2,497 34	132
85	clay...	124				4	metal ..		5.00	1,704 76	133
80	earth...	454				1	metal ..	.25	.50	300 00	134
23						1	stone ..		1.25	300 00	135
75	earth...	2,152	1	40	wood .	8	metal ..		5.00	1,498 46	136
640						2	wood ..		2.00	3,136 01	137
.....						7	cedar...		3.00	790 04	138
.....									2.00	449 82	139
52	earth...	293				3	metal ..		5.00	1,100 00	140
.....			3	10	plank	20	cedar...		20.00	1,600 00	141
.....									11.00	1,484 85	142
.....	earth...	1,250				1	wood ..		2.10	1,500 00	143
.....						1	metal ..		3.00	900 00	144
.....			2	10	cem't	6	cement ..		1.60	750 00	145
.....	earth...	200				1	metal ..		3.00	780 96	146
.....								1.00	.50	675 00	147
21,817	.....	26,512	58	.....	.....	1,005	.....	24.82	718.63	162,552 25	.....



## MISCELLANEOUS EXPENDITURES, COLONIZATION ROADS.

Services.	Expenditures.	
1. Inspection of Roads and Bridges .....	\$15,548 42	\$15,548 42
2. Storage of Tools (W. W. Pringle) .....	\$2 00	
Storage of Tools (B. R. McMullin) .....	36 00	
Rent of Storehouse (W. E. Kerr) .....	72 00	\$110 00
3. Compensation for Injuries:		
E. L. Bell .....	\$41 25	
L. S. Walker .....	258 00	
L. L. Martin .....	18 15	
N. Leclaire .....	98 18	
T. H. Webster .....	35 57	\$451 15
4. Conference expenses (Road Inspectors) .....	\$1,185 20	\$1,185 20
5. Conference expenses .....	\$37 50	\$37 50
6. Mud Creek Bridge .....	\$478 75	\$478 75
7. Surveys:		
Feronia to Widdifield Road .....	\$577 55	
Mattagami River Bridge .....	210 00	
German Township Road .....	54 00	
Porcupine Road .....	432 95	
Feronia Road .....	35 00	
Miscellaneous .....	32 00	\$1,341 50
8. Road Account, 1919 (Fulkoskie) .....	\$30 22	\$30 22
9. Rental of right-of-way (C.P.R.) .....	\$2 00	\$2 00
10. Purchase of machinery, etc:		
Northern Canada Supply Co. (steam drill) .....	\$275 00	
Freight on grader .....	10 50	
Toronto Motor Car Co. (motor car) .....	1,035 86	
McLaughlin Motor Car Co. (repairs to car) .....	33 85	
J. H. Biehl (motor car) .....	990 00	
Goodyear Tire & Rubber Co. (tires) .....	117 97	\$2,463 18
11. Road Accounts, 1919:		
Feronia Road .....	\$30 75	
Palmerston Township Road .....	27 50	
Calabogie Graphite Mine Road .....	136 23	
Field Road .....	202 50	
Griffith and Matawatchan Road .....	10 00	
Sherwood and Jones Road .....	10 00	
Nepowassan Road .....	10 00	
Hagar and St. Charles Road .....	768 25	
Gorham Township Road .....	108 12	
Clarendon and Palmerston Road .....	3 40	
Bagot and Blythfield Road .....	25 00	
Somerville Township Road .....	19 95	
Balfour Morgan Road .....	9 20	
Franklin Township Road .....	24 42	
Matchedash Township Road .....	17 55	
Ware Township Road .....	40 75	
Inspection October, 1919 .....	171 75	\$1,615 37
		\$23,263 29

No.	RECAPITULATION	Cleared and stumped	Graded and shaped	Surfaced	Ditched	Cut and fill	Bridges	Culverts	New Road	Old Road	EXPENDI- TURE No.
		rods	rods	rods	rods	cu. yds.	number	number	miles	miles	
1	Direct Grants and Drainage...	44,458	122,825	79,065	21,163	44,974	33	1,064	77.02	505.00	\$ c. 265,993 05 1
2	By-law Grants.....	24,750	163,850	109,407	21,817	26,512	58	1,005	24.82	718.63	162,552 25 2
3	Miscellaneous Expenditures...	.....	.....	.....	.....	.....	.....	.....	.....	.....	23,263 29 3
	Grand Total.....	69,208	286,675	188,472	42,980	71,486	91	2,069	101.84	1,223.63	451,808.59

*Appendix No. 44.*

*To the Honourable the Minister of Lands and Forests, Ontario.*

SIR,—I have the honour to submit to you the report on the construction and maintenance of highways and bridges, under the provisions of the Northern and North Western Ontario Development Act, 1912, and amendments, during the season ending 31st October, 1920.

Operations were carried on in the Districts of Rainy River, Kenora and Thunder Bay, the Sub-districts of Sault Ste. Marie, St. Joseph's Island and Manitoulin, the Districts of Algoma, Sudbury, Nipissing, Parry Sound, Muskoka and Timiskaming, the Counties of Renfrew and Simcoe and in Algonquin Park. In the detailed report following, the District of Timiskaming is shown in sub-divisions as follows: Cochrane, Englehart, Kapuskasing and Hearst, Matheson, and Porcupine.

The North Bay-Toronto, Mattawa-Pembroke and other trunk roads traversing more than one district have been shown separately in the detailed report and only works completely in a district are shown under that district heading, the districts being placed in alphabetical order.

The sudden death of Mr. Whitson, on June 12th, 1920, coming at a time when early summer organization and re-organization was under way, rendered the matter of arranging efficient supervision a difficult undertaking without an actual cessation of activities for a time, but the work was carried on as efficiently as possible under the circumstances and supervised by the then existing staff without additions.

In conclusion, I would add, as in former reports, that the Department's organization should include considerably more technically trained and experienced road makers to advise and direct the actual work carried on in the various districts.

All of which is respectfully submitted,

I have the honour to be, Sir,

Your obedient servant,

C. H. FULLERTON,

*Director, Northern Development Branch.*

Toronto, October 31st, A.D. 1920.

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### ALGONQUIN PARK.

On the Minessing Road from Algonquin Park Station to Minessing Camp, a distance of  $7\frac{1}{2}$  miles,  $2\frac{1}{4}$  miles brushed out and 3 miles widened by tree cutting 8 ft. wide, 200 ft. lineal of crosslaying, 300 ft. of ditching,  $\frac{1}{2}$  mile of ditches cleaned, 125 loads of stone used for filling, 18 culverts constructed, and 2,503 cu. yds. of gravel used in surfacing and repairs, and the whole distance kept dragged.

## MATTAWA-PEMBROKE ROAD.

From Chalk River Bridge to Tuckers Creek Bridge, in the Townships of Buchanan and Wylie, about 4 miles of this road were brushed out, stumped, grubbed, and graded, 14 iron culverts were installed, two bridges repaired, and 2,400 cu. yds. of gravel used in surfacing.

In the Townships of Petawawa and Alice from Pembroke to Petawawa, 5 miles were dragged and the whole 10 miles repaired with gravel.

West of Chalk River, in the Townships of Buchanan, Wylie and Ralph, 11½ miles covered with 300 loads of cinders, 4 miles dragged, 2 new culverts installed, several repaired, and 130 cu. yds. gravel used in general repairs.

In the Townships of Papineau and Cameron, from Mattawa to Klock, a distance of 15 miles, 2½ miles cut out, 4¼ miles stumped and grubbed, 8 miles graded, 1,820 ft. ditching, 9 miles dragged, 1,452 cu. yds. of gravel used in surfacing and repairs, 2 timber, 1 stone, and 13 iron culverts installed.



Mattawa-Pembroke Road.

## ROAD FROM NORTH BAY TO SUDBURY.

On the the 24-mile section between North Bay and Sturgeon Falls, 15½ miles brushed, 2,586 cu. yds. gravel used in surfacing and repairs, 9,560 ft. ditching, 3 culverts repaired, and 4 miles dragged.

From Sturgeon Falls to Verner, a distance of ten miles, 321 cu. yds. of gravel used in repairing 3 miles across Lots 1 to 6, Township of Caldwell, 1,971 cu. yds. of gravel on the 6 miles east of Verner, and in the Township of Springer, on the 4 miles west of Sturgeon Falls, 1 iron culvert was installed, 1 culvert rip-rapped with 10 loads of stone, and 1,477 cu. yds. gravel used in repairs and re-surfacing. From 1 mile east of Cache Bay to 3 miles west of Cache Bay 510 cu. yds. of gravel was used in surfacing and repairs.



In the Townships of Caldwell and Kirkpatrick, 8 miles were repaired using 1,075 cu. yds. of gravel. In Kirkpatrick Township, between Kirk and Warren, 181 cu. yds. of gravel were used in repairs over a distance of 5 miles. In Dunnett Township, the road for 4 miles east and 3 miles west of Warren was repaired with 989 cu. yds. of gravel.

From Warren to Hagar the road for 5 miles, in the Township of Hagar, was repaired with 104 yards gravel, and the culverts were also repaired.

On the 6 miles east of Markstay, in Hagar and Ratter Townships, the ditches were cleaned and road repaired with 388 yds. gravel.

Between Markstay and Stinson, 7 miles were brushed out, 121 yds. of clay used in fill, 200 cu. yds. of stone and 692 yds. of gravel were used in surfacing and repairs—this work was in the Townships of Hagar and Awrey.

Between Stinson and Wahnapiatae, 7 miles of road were repaired with 192 cu. yds. of gravel and the culverts repaired.

The 4 miles from Wahnapiatae to Coniston were repaired, 455 cu. yds. of gravel and 11 loads of stone being used.

From Coniston to Sudbury, 8 miles repaired with 304 cu. yds. of gravel and 3 iron culverts installed.

### TRUNK ROAD, NORTH BAY TO TORONTO.

#### *County of Simcoe:*

In the Township of North Orillia, 3 miles were graded, 11 iron culverts constructed and 7,976.5 cu. yds. of crushed stone used in surfacing, the distance covered being about 7 miles.

#### *District of Muskoka:*

From 3 miles south to 3 miles north of Gravenhurst, in the Township of Muskoka, general repairs were carried out, using 510 cu. yds. of gravel, and .15 mile was brushed out.

From lot 1, Concession 10, Macaulay, to lot 25, Concession "A," Monck, a distance of  $1\frac{1}{4}$  miles, 800 cu. yds. of gravel used in surfacing.

Between Bracebridge and Falkenburg, in the Township of Monck, between Concessions 8 and 9, 973 cu. yds. of crushed rock used in surfacing over a mile of road.

On lot 9, Concession 6, Township of Stephenson at the end of Long Lake, 825 cu. yds. of rock cut to widen road through cuts. Between lots 20 and 21, Concession 10, 60 cu. yds. of rock quarried for bridge. From Utterson north to lot 30, Concession 12,  $\frac{1}{4}$  mile stumped and grubbed,  $3\frac{3}{4}$  miles graded, 2,234 cu. yds. gravel used in surfacing and repairs, 800 ft. ditching, and  $3\frac{1}{2}$  miles dragged. From lot 30, Concession 12, Stephenson, north to Huntsville, in Township of Chaffey,  $1\frac{1}{2}$  miles grubbed,  $4\frac{1}{2}$  miles graded, 1,090 cu. yds. gravel used in surfacing, 5,700 ft. ditching, 3 stone culverts constructed and  $11\frac{1}{2}$  miles dragged.

From Melissa in Concession 10, Chaffey, northwards to Scotia Junction in Concession 8, Township of Perry, District of Parry Sound, 8.5 miles dragged, 3 miles graded, 927 cu. yds. gravel used in surfacing, and 1,000 ft. ditching.

In the Township of Chaffey,  $\frac{3}{4}$  mile cut out, stumped and grubbed,  $3\frac{1}{2}$  miles graded, 5,127 cu. yds. gravel used in surfacing over 10 miles, 5,158 ft. ditching, 2 timber, 4 stone and 5 iron culverts constructed, 1 temporary bridge erected, 1.5 miles dragged, and 155 yds. of stone used in approach to bridge.

*District of Parry Sound:**Township of Perry:*

From  $1\frac{1}{4}$  miles north of Novar to northern boundary of township, a distance of about 14 miles, 14 miles brushed out and dragged. One timber culvert constructed, 420 ft. ditched and 149 cu. yds. gravel used in surfacing and repairs.

In the Township of Armour, south of Burks Falls,  $3\frac{1}{2}$  miles graded, 141 cu. yds. gravel used in repairs, 2 culverts repaired,  $2\frac{1}{4}$  miles dragged, and wash-outs filled.



Baysville-Bracebridge Road (Muskoka).

From Burks Falls, in Armour Township, to Powassan, in Himsworth Township, a distance of about 35 miles, 7 miles brushed out, 14 miles graded, 630 yds. gravel and 676 yds. cinders used in repairs, 4 timber culverts constructed and 35 miles dragged.

From Powassan to North Bay, in the Townships of Himsworth and Ferris, a distance of about 23 miles, 4 timber culverts constructed,  $9\frac{1}{2}$  miles brushed out, 171 cu. yds. gravel used in surfacing and repairs,  $2\frac{1}{2}$  miles graded and 23 miles dragged.

In addition to the foregoing, the road from Burks Falls to Callander, 53 miles was graded up and repaired with 220 cu. yds. gravel.

## ROAD FROM SWASTIKA TO KIRKLAND LAKE AND TOUGH OAKES MINES.

This road, in the Township of Teck, District of Timiskaming, is the only outlet for the "Kirkland Lake Gold Camp" and all supplies and material have been transported by this route. The construction of a water bound macadam road, in lieu of a railroad, was commenced in the season of 1919. The work necessitated considerable expenditure in drainage and a number of minor diversions from the original travelled road were found advisable. The distance from Swastika to Tough Oakes is approximately 6 miles and the entire distance is now well surfaced with crushed stone and steam rolled, with the exception of a few hundred feet the surfacing material for which we were unable to secure, owing to a shut off of power which put the crushing plant out of business a week or so before the forced closing down of the work, due to snowstorms. During the season, 13,468 cu. yds. of stone were placed on the road covering a distance of 4.9 miles.

## COCHRANE DISTRICT.

*Township of Brower:*

Between lots 8 and 9 across Concession 4, 1 mile stumped and grubbed, 2 miles side ditching and 240 ft. off-take ditching.

Between Concessions 2 and 3 across parts of lots 11 and 12, 740 feet side ditching and 480 ft. repairs.

From line between lots 8 and 9 to Abitibi Station, south of C. N. Railway, 2½ mile cut and burned, and 5 timber culverts constructed.

Between Concessions 4 and 5 across lot 9, 1 mile stumped and grubbed and 5,500 ft. of side ditching.

Between lots 6 and 7 across Concessions 3 to 6, 1 mile stumped and grubbed, 10,520 ft. of side ditching, and 10 timber culverts constructed.

On south side of T. & N. O. Rralway from M.P. 245½ to boundary of St. John and Brower, also across lot 11 on St. John and Brower Townline, 1 mile cut and burned, 8 miles stumped and grubbed, and 12,578 ft. of side ditching.

Between Concessions, 4 and 5 across lot 6, ½ mile graded, 9 timber culverts and 1 timber bridge constructed.

South of C. N. Railway, across lots 7, 8 and 9, Concession 4, 4 timber culverts constructed.

Between Concessions 3 and 4 across lot 9, ¼ mile graded.

Between Concessions 5 and 6 across lot 6, 2 timber culverts constructed.

*Townline Townships of Brower and Kennedy:*

Ferry across the Abitibi River on lot 5 repaired and placed in good condition.

*Townline Townships of Brower and Fox:*

On Concession 1, 4 timber culverts constructed.

*Township of Calder:*

On south boundary across lots 1 and 2, ¼ mile stumped, grubbed and graded.

Between Concessions 6 and 7 across lots 17-24, 21,852 ft. of side ditching and 1,139 ft. of off-take ditching.

Between Concessions 8 and 9 across lots 13-15, 5,267 ft. of side ditching and 3,855 feet of off-take ditching.

Between Concessions 8 and 9 across lots 1-3, 5,870 ft. of side ditching and 206 ft. of off-take ditching

Between Concessions 8 and 9 on lot 25, scow 30 ft. x 16 ft. by  $2\frac{1}{2}$  ft. constructed for ferry across Driftwood River.

Between Concessions 4 and 5 on lot 2, 2 chains graded and one timber bridge constructed 102 ft. x 16 ft. x  $9\frac{1}{2}$  ft.

Between Concessions 10 and 11 on lot 16, 1 timber bridge constructed 80 ft. x 12 ft. x 7 ft.

Between lots 16 and 17 across Concessions 7 to 10, 7 timber culverts constructed and 1 repaired, also 3 chains of creek cleared of logs and underbrush.

#### *Township of Calvert:*

Between Concessions 4 and 5 across lots 3-5, 1 mile graded and 4 timber culverts constructed.

Between lots 4 and 5 across Concessions 3 and 4, 1 mile cut and burned.

From "Wye" to "Townsite," Iroquois Falls,  $\frac{1}{4}$  mile graded and 4 timber culverts constructed.

Between Concessions 4 and 5 across lots 1 and 5, 1 mile graded, 1 timber bridge constructed 52 ft. x 14 ft. x 7 ft., and 1 mile repaired.

Trunk Road, Porquis Junction to Iroquois Falls,  $2\frac{1}{2}$  miles graded.

#### *Township of Clergue:*

Between Concessions 4 and 5 across lots 1-6,  $11\frac{1}{2}$  miles burned, 1 mile stumped and grubbed,  $11\frac{1}{2}$  miles graded, 16 timber culverts constructed, and 788 ft. of off-take ditching.

Between Concessions 5 and 6 across lots 11 and 12,  $9\frac{1}{2}$  chains stumped and grubbed, and 3,240 ft. side ditching.

On street from station to schoolhouse, Townsite of Porquis Junction, 3 timber culverts constructed,  $\frac{1}{2}$  mile gravelled with 394 cu. yds. of gravel and  $\frac{1}{5}$  mile graded.

#### *Township of Clute:*

Between lots 12 and 13 across part of Concession 9,  $5\frac{1}{2}$  chains stumped and grubbed, and 1,300 ft. of side ditching.

Between Concessions 8 and 9 across lots 11 and 12, 7,186 ft. of side ditching, 530 ft. off-take ditching,  $\frac{1}{2}$  mile stumped and grubbed.

Between Concessions 10 and 11 across lots 27 and 28,  $\frac{1}{10}$  mile stumped and grubbed.

Between Concessions 4 and 5 across lots 26 and 28,  $\frac{1}{12}$  mile stumped and grubbed, 3,552 ft. side ditching, 420 ft. off-take ditching, 1 culvert constructed and 13 chains repaired.

Between Concessions 8 and 9 across lots 22 and 23,  $\frac{1}{2}$  mile cut and burned, stumped and grubbed and graded, 3,489 ft. side ditching, 116 ft. off-take ditching 9 timber culverts and 1 timber bridge constructed 107 ft. x 12 ft. x 8 ft.

Between Concessions 10 and 11 across lots 1-3,  $\frac{1}{2}$  mile stumped and grubbed, 514 ft. of side ditching and 211 ft. of off-take ditching.



Between Concessions 8 and 9 across lots 4-7,  $\frac{3}{8}$  mile cut and burned,  $\frac{3}{4}$  mile stumped and grubbed, 4,841 ft. of side ditching, 834 ft. of off-take ditching and 1 timber culvert constructed.

Between lots 12 and 13 across Concession 9, 435 ft. of side ditching.

Between lots 18 and 19 across Concession 4, 7,810 ft. of side ditching and 643 ft. of off-take ditching.

Between Concessions 4 and 5 across lots 8 and 9, 4,572 ft. of side ditching, 121 ft. of off-take ditching, and 3 timber culverts constructed.

Between Concessions 4 and 5 across lot 25,  $\frac{1}{4}$  mile cut and burned, stumped and grubbed, 4,800 ft. of side ditching and 110 ft. of off-take ditching.

Between Concessions 10 and 11 across lots 24 and 25,  $\frac{1}{2}$  mile stumped and grubbed.

Between Concessions 8 and 9 across lots 23-26, 1 mile graded and 6 timber culverts constructed.

Between lots 12 and 13 on Concession 6, log jam at Buskegow Bridge removed.

Between Concessions 6 and 7 across lots 25 and 26, 4 chains graded, 1,254 ft. side ditching and 1 timber bridge repaired.

From Concessions 2 and 3 to Frederick House River, south of C. N. Ry., 5 chains graded and 1 culvert constructed.

#### *Townline, Townships of Clute and Fournier:*

Lots 4 to 7 inclusive and across Frederick House River, 2 timber bridges repaired, 660 ft. off-take ditching, 1 timber culvert 18 ft. x 4 ft. x 2 ft., and 1 timber bridge 44 ft. x 10 ft. x 4 ft. constructed.

#### *Townline, Townships of Clute and Calder:*

Across Concessions 5 to 9, 7 chains graded and 2 timber culverts repaired.

#### *Townline, Townships of Clute and Glackmeyer:*

Across Concessions 3 and 4,  $\frac{3}{8}$  mile graded, 3,810 ft. of side ditching, 2,540 ft. of off-take ditching and 5 timber culverts constructed.

#### *Township of Dundonald:*

Between lots 6 and 7 across Concession 3,  $\frac{3}{4}$  mile underbrushed.

#### *Township of Fox:*

Between Concessions 2 and 3 across lots 7-12,  $1\frac{1}{2}$  miles cut out and  $\frac{1}{8}$  mile burned,  $\frac{3}{4}$  mile stumped and grubbed, 3,745 ft. side ditching and 228 ft. off-take ditching.

Between Concessions 4 and 5 across lots 7-12,  $2\frac{1}{2}$  miles underbrushed, 1 mile stumped and grubbed, and 2 miles graded.

Between lots 8 and 9 across Concessions 2 and 3,  $1\frac{1}{8}$  miles cut, burned, stumped and grubbed.

Between lots 4 and 5 across Concessions 2 and 3, 2 miles cut and burned.

#### *Townline, Townships of Fox and Pyne:*

Across lots 10-12,  $\frac{1}{2}$  mile underbrushed and 2 timber culverts constructed.

*Township of Fournier:*

Between Concessions 5 and 6 across lots 3-7, 19,400 ft. side ditching, 1,492 ft. off-take ditching, 2 miles underbrushed, stumped and grubbed; and across lot 2,  $\frac{1}{8}$  mile stumped and grubbed, and 3,442 ft. of side ditching.

Between lots 7 and 8 across Concessions 5 and 6, 2 miles of survey line cut out.

*Township of German:*

Between lots 11 and 12 across Concessions 5 and 6,  $\frac{1}{2}$  mile stumped, grubbed and graded. Dam on Frederick House River at Connaught repaired.

*Township of Glackmeyer:*

Between lots 21 and 22 across Concessions 3 and 4,  $\frac{5}{8}$  mile cut out 15 ft. wide,  $\frac{3}{8}$  mile cut out 33 ft. wide. stumped and grubbed.

Between lots 24 and 25 across Concessions 7 and 8,  $1\frac{1}{2}$  miles burned, stumped and grubbed, and 1,492 ft. of side ditching.

Between lots 24 and 25 across Concession 2, and between Concessions 2 and 3 across lots 25-28,  $1\frac{1}{8}$  miles graded, 1,030 ft. of off-take ditching, 1 timber culvert constructed and  $\frac{3}{4}$  mile repaired.

Between Concessions 6 and 7 across lots 15-18, 1 timber culvert constructed and  $1\frac{1}{4}$  miles repaired.

Between Concessions 8 and 9 across lot 28, 2 chains gravelled, 33 ft. of off-take ditching and 1 bridge 40 ft. x 12 ft. x 6 ft. constructed.

Between Concessions 10 and 11 across lots 13-19,  $\frac{1}{4}$  mile graded, 330 ft. side ditching, 1 timber culvert and 1 timber bridge 30 ft. x 14 ft. x 4 ft. constructed and 1 bridge repaired.

Between Concessions 4 and 5 across lots 9-11, 1 timber bridge repaired and 1 mile of road repaired.

Between Concessions 2 and 3 across lots 16 and 17, 3 culverts repaired and  $\frac{3}{4}$  mile of road repaired.

Between Concessions 4 and 5 across lots 13-17, 2 timber culverts constructed and  $1\frac{1}{2}$  miles of road repaired.

*Townline, Townships of Glackmeyer and Lamarche:*

Across lots 9-11, 1 mile graded, 2 chains gravelled, 2,600 ft. of side ditching and  $1\frac{1}{2}$  miles of road repaired.

*Township of Kennedy:*

Between lots 24 and 25 across Concessions 3 and 4,  $1\frac{1}{4}$  miles stumped and grubbed, and 15,678 ft. of side ditching.

Between Concessions 4 and 5 across lots 22-24, 1 mile stumped and grubbed, 10,062 ft. of side ditching and 5 timber culverts constructed.

On south boundary across lots 19-22, 2 timber culverts repaired and 5 chains of road repaired.

*Township of Lamarche:*

Across north part of lot 9, Concession 6, also across north part of lot 6, Concession 6, Lamarche, and south part of lot 19, Concession 1, Glackmeyer, 4,715 ft.

of off-take ditching which necessitated cutting, burning stumping and grubbing  $\frac{7}{8}$  mile 10 ft. wide.

Between lots 6 and 7 across Concessions 1-6,  $\frac{1}{4}$  mile cut, stumped and grubbed, 6 ft. wide for off-take ditch,  $5\frac{1}{4}$  miles grading,  $\frac{3}{8}$  mile gravelling, 1,320 ft. side ditching, 6 timber culverts and one timber bridge constructed, 1 bridge repaired and 2 miles of road repaired.

Between lots 8 and 9 across Concession 5,  $\frac{3}{4}$  mile graded,  $\frac{1}{8}$  mile gravelled, 198 ft. of side ditching, 5 timber culverts constructed, 2 bridges repaired, and  $1\frac{1}{4}$  miles of road repaired.

#### *Township of Leitch:*

Between Concessions 4 and 5 across lots 1-3, 5 chains cut, burned, stumped and grubbed, 2,614 ft. of side ditching, 220 ft. of off-take ditching, and 5 timber culverts constructed.

Between Concessions 2 and 3 across lots 1-3, 6,600 ft. of side ditching, 1,125 ft. of off-take ditching and 2 timber culverts constructed.

#### *Township of Newmarket:*

From M. P. 236 T. & N. O. Railway north to boundary of St. John Township,  $\frac{1}{5}$  mile cut out and  $\frac{3}{8}$  mile stumped and grubbed.

### ENGLEHART DISTRICT.

#### *Townline, Townships of Armstrong and Evanturel:*

Across lots 9-11, 2,400 ft. cut, burned, stumped and grubbed.

#### *Townline, Townships of Beauchamp and Dack:*

Across lot 2, low lying portion of road filled in and gravelled.

#### *Township of Boston:*

Crossing over Boston Creek near Station, 1 timber bridge constructed, 30-ft. span with dovetailed piers loaded with rock.

#### *Township of Catharine:*

Between Concessions 1 and 2, lot 12,  $\frac{1}{4}$  mile stumped and grubbed,  $\frac{1}{2}$  mile graded, 5 timber culverts constructed and 4 hills cut to improve grade.

On lot 9, Concession 6, 1 timber bridge, 50-ft. span, constructed on the Boston Creek-Skead Trail, also 1 small pole bridge, span 15-ft.

#### *Township of Chamberlain:*

Between Concessions 3 and 4 across lots 7 and 8,  $\frac{1}{2}$  mile stumped, 1 mile grubbed and graded, 5 timber culverts constructed and 25 yds. cross-laying 10 ft. wide.

Between lots 2 and 3, Concession 1,  $\frac{1}{4}$  mile of road clay covered.

Between Concessions 5 and 6, lots 8, 9 and 10, between Concessions 4 and 5, lots 11 and 12, and between lots 10-11, Concession 5,  $\frac{1}{2}$  mile stumped and grubbed,  $3\frac{3}{4}$  miles graded, hills cut down, 7 timber culverts and 2 timber bridges constructed.

*Townline, Townships of Chamberlain and Pacaud:*

On lot 1 a 60-ft. span bridge was partially reconstructed, work being still in progress at the close of year.

*Townline, Townships of Chamberlain and Dack:*

Across lot 2,  $\frac{1}{6}$  mile gravelled.

*Township of Dack:*

Between Concessions 4 and 5 across lots 3 and 4,  $\frac{1}{2}$  mile side ditches cleaned out, boulders removed from road, and 4 rods of road raised with gravel.

Between Concessions 3 and 4 across lots 5 and 6, road dragged 1 mile.

Between Concessions 3 and 4, lot 7, washout on hills and approach to culvert filled in and grade of hills reduced.

Between Concessions 4 and 5 across lots 5 and 6, 100 yds. of road cut out, stumped and temporary culverts constructed.

*Townline, Townships of Dack and Evanturel:*

Across Concession 6, 1,322 ft. gravelled  $6\frac{1}{2}$  ft. wide, 2 spans on High Falls bridge re-constructed.

*Townline, Townships of Dack and Beauchamp:*

On lot 2, low lying portion of road filled in with gravel.

*Township of Evanturel:*

Between Concessions 2 and 3, lot 12,  $\frac{1}{2}$  mile cut out, stumped, grubbed and graded, 3 timber culverts constructed and 2 hills cut down.

Between Concessions 5 and 6 lot 10, washout on approach to bridge repaired, bridge piles spliced, pier re-sheeted, and cut water plates installed.

*Township of Ingram:*

Across Concession 2, lots 6 and 7, 2,700 ft. side ditching.

Between lots 2 and 3, Concession 3,  $\frac{1}{2}$  mile stumped and graded, 150 yds. gravelled 6 ft. wide, and 1 timber culvert constructed.

Between Concessions 2 and 3, lots 1 and 2, 1,280 ft. gravelled  $6\frac{1}{2}$  ft. wide.

Between lots 2 and 3, Concession 2, 693 ft. gravelled  $6\frac{1}{2}$  ft. wide.

Between Concessions 3 and 4, off-take ditch cleaned out to drain trunk road.

*Township of Mickle:*

Covering repaired on 2 bridges over Bear Creek on Elk Lake-Gowganda Road.

*Township of Marquis:*

Across lots 1 to 7,  $4\frac{1}{2}$  miles cut out 66 ft. wide.



*Townline, Townships of Savard and Sharpe:*

Across Concessions 1 and 2, 2 miles graded with ditcher and 1 timber culvert constructed. This work not quite completed.

*Township of Marter:*

Between Concessions 3 and 4, across lots 5 to 8, 2 miles graded, 5 timber culverts constructed, side hills cut and grades reduced.

*Township of Pacaud:*

Between Concessions 2 and 3, lots 5 to 8, 2 miles cut out 66 ft. wide.

Between lots 4 and 5, Concessions 1 and 2 and between Concessions 2 and 3, lots 5 and 6, 1 mile stumped and grubbed, 2 miles graded, 3 timber culverts constructed, approaches to bridge renewed, side hills cut and grades reduced.

*Townline, Townships of Pacaud and Boston:*

Across lots 11 and 12 to Rosegrove spur,  $2\frac{1}{4}$  miles cut out 66 ft. wide.

*Township of Robillard:*

Between lots 8 and 9, Concession 4, 1 mile stumped 20 ft. wide.

Between lots 8 and 9, Concession 2, 2 miles graded, 1,500 ft. off-take ditching, 20 culverts constructed, and grades reduced.

Between lots 2 and 3, Concession 6 and between Concessions 5 and 6, lots 2, 3 and 4,  $\frac{1}{2}$  mile stumped and grubbed,  $2\frac{1}{2}$  miles graded, and 5 timber culverts constructed.

Between lots 8 and 9, Concession 6,  $\frac{1}{4}$  mile stumped and grubbed,  $\frac{1}{2}$  mile graded, 3 timber culverts constructed, and grade reduced on 2 hills.

*Township of Savard:*

Between lots 6 and 7, across Concessions 3 and 4,  $\frac{1}{4}$  mile stumped,  $\frac{1}{2}$  mile graded, 3 timber culverts constructed, and grade reduced on 6 hills.

Between Concessions 4 and 5, across lot 6,  $\frac{1}{2}$  mile stumped, grubbed and graded, 4 timber culverts constructed, and 50 ft. of cross-laying 10 ft. wide.

*Township of Sharpe:*

Between Concessions 1 and 2, lot 1,  $\frac{1}{2}$  mile stumped and grubbed, and 1 mile of side ditching.

## KAPUSKASING AND HEARST DISTRICT.

*Trunk Road along C. N. Railway:*

In the Townships of O'Brien and Owens, from M.P. 64 to M.P. 73, 300 ft. graded 22 ft. wide, 8,500 feet side ditching, 2,000 ft. of off-take ditch, 10 timber culverts constructed,  $7\frac{1}{2}$  miles repaired and dragged, 8,500 ft. re-ditching, 3,000 ft. of muskeg surfaced with clay, and approaches to 3 culverts filled.

*Trunk Road, Ryland to Hearst:*

In the Townships of Way and Hanlan, 1 mile graded, 2,000 ft. muskeg covered with clay, 2,000 ft. side ditching, 2 timber culverts constructed, 8 miles dragged and 6 culverts re-covered.

*Township of Casgrain:*

Between lots 24 and 25, across part of Concession 1, 3,000 ft. re-ditched. Between Concessions 2 and 3, across lot 16, 1,000 ft. graded, 1 timber culvert constructed, and approach to 1 culvert filled.

Between lots 18 and 19, across part of Concession 3, 1,250 ft. ditched, 2 timber culverts constructed, and approaches to culverts filled.

Between Concessions 2 and 3, across part of lot 23, 1,000 ft. ditched. In addition to the foregoing, 10 culverts in various locations were re-covered.

*Boundary Line, Townships of Casgrain and Kendall:*

Across lot 25 and part of lot 27, 5,000 ft. side ditching and 5,000 ft. re-ditched.

*Township of Kendall:*

Between Concessions 6 and 7, across lot 28, 3,330 ft. side ditching.

Between Concessions 6 and 7, across lot 26, 1,665 ft. cut, burned and grubbed 66 ft. wide, 3,330 ft. side ditching and 500 ft. off-take ditching.

Between Concessions 8 and 9, across lots 27 and 28, 5,630 ft. side ditched.

Between lots 24 and 25, across part of Concession 12, 4,000 ft. side ditched.

In addition to the foregoing, a bridge was constructed over Mattawishquia River at Ninth Street, Hearst, and the approaches filled and graded. Cinders were placed on 2,400 ft. of approaches to railway crossing, and  $2\frac{1}{2}$  miles of trunk road along railway repaired between M.P. 125, and M.P. 129.

*Boundary Line, Townships of Kendall and Way:*

At railway crossing, 1,400 ft. grading 22 ft. wide, 400 ft. of off-take ditch and 2 concrete culverts 18 in. diameter.

*Township of Fauquier:*

Between lots 12 and 13, across Concessions 3 to 6,  $\frac{3}{4}$  mile cut out,  $3\frac{3}{4}$  miles burned and grubbed, 9 temporary bridges constructed,  $5\frac{3}{4}$  miles of side ditching, and  $\frac{1}{2}$  mile off-take ditching.

Between Concessions 4 and 5, across lots 6 to 12 and between lots 6 and 7, across Concessions 3 and 4,  $3\frac{1}{2}$  miles cut out and grubbed.

*Boundary Line, Townships of Hanlan and Way:*

Across lots 4, 5, 6 and 7,  $3\frac{1}{2}$  miles side ditching and 2,000 ft. off-take ditching.

*Township of O'Brien:*

Between lots 24 and 25, across part of Concession 10, 1,300 ft. ditching and 1,300 ft. re-ditching.

Between Concessions 8 and 9, across part of lot 22, 250 ft. ditching and 250 ft. re-ditching.

*Township of Shackleton:*

Between Concessions 10 and 11, across lots 23 to 27, 1,980 ft. cut out.

Between lots 24 and 25, across Concessions 7 and 8 and between Concessions 6 and 7, across lots 22 to 24, 4,620 ft. cut out.

KENORA DISTRICT.

*Kenora—Pellatt Road:*

From Tunnell Island, at Kenora, to the line between lots 11 and 12, Concession 4, Pellatt Township, a distance of about 14 miles, this road was kept dragged, 4 miles were cut out,  $\frac{3}{4}$  mile stumped and grubbed,  $13\frac{1}{2}$  miles graded or re-graded, 5,300 ft. ditched, 12 timber culverts constructed and 12 repaired, and 2,475 cu. yds. of gravel used in surfacing and repairing.

Two miles of road on the line between lots 8 and 9, Concessions 3 and 4, known as Sandy Lake Road, were included in the operations enumerated in the foregoing paragraph.

*East Melick and Charlesbois Roads:*

From mining claim K104 north easterly across the Mandarin mining location, etc., to the line between lots 12 and 13, Concession 8 Jaffray, on the East Melick Road; and across lot 2, Concession 1 Melick, on the Charlesbois Road, .85 mile was cut, .47 stumped and grubbed, 1.25 graded or re-graded, 3,500 ft. ditched, 3 stone culverts constructed and 1 repaired, 50 cu. yds. rock cut, and 550 yds. of gravel used in surfacing. The work covered a distance of 3 miles.

*Winnipeg River Road:*

On lot 2, concession 6, Jaffray, a  $\frac{1}{4}$  of a mile was cut out, ditched and graded, 60 yds. of gravel being used in surfacing.

*Kenora-Keewatin Road:*

The only work on this road consisted of blasting operations at a dangerous turn in the road where 12 cu. yds. of rock were removed.

*East Melick Road to Redditt:*

Starting at the junction with Charlesbois Road, on lot 12, Concession 8, Jaffray and continuing northwards on lot 12, Jaffray; lot 1, Concession 1, Melick; and between lots 4 and 5, across Concession 2 and south half Concession 3, 2 miles were cut out, 1.4 miles stumped and grubbed, 2.7 miles graded, 264 ft. ditched, 3 timber culverts constructed, 40 cu. yds. of rock blasted, and 532 cu. yds. of gravel used in surfacing.

*West Melick Road:*

From the boundary between Jaffray and Melick northwards between mining claims S 479 and D 747, etc., to the line between lots 12 and 13, Concession 3,

Melick, on the north boundary of claim S 490, a distance of  $2\frac{1}{2}$  miles, 2 miles were cut out 66 ft. wide and a  $\frac{1}{4}$  mile 40 ft. wide,  $1\frac{1}{4}$  mile was stumped and grubbed,  $1\frac{1}{2}$  mile graded, 14,500 ft. ditched, 9 timber culverts constructed, and 925 cu. yds. of gravel used in surfacing.

*Oxdrift to Vermilion Bay:*

Running along the C. P. Railway right-of-way, through the Townships of Eton, Sandford, Nutrie and Langton, 8.5 miles cut out 66 ft. wide, 9.75 miles stumped and grubbed, 13 miles graded or re-graded, 17,454 ft. ditched, 15 timber and 2 galvanized iron culverts constructed, 4,395 cu. yds. of gravel was used in surfacing and repairing, and the entire 20 miles kept dragged up and in good condition.

*Dryden to Wabigoon:*

Running along the C. P. Railway right-of-way, through the Townships of Wainwright and Zealand, a distance of 17 miles. This road was kept in repair.

*Township of Aubrey:*

"Lyles Road," between lots 8 and 9, across Concessions 5 and 6 thence southerly across I.R.27 and between lots 6 and 7, on south half of Concession 4, together with a branch road running north-easterly across lots 4, 5 and 6 from the south east corner of lot 7, Concession 4. One mile cut out,  $1\frac{1}{2}$  miles brushed 30 ft. wide,  $4\frac{1}{2}$  miles stumped, grubbed and graded, 400 ft. ditched, and 3 timber culverts constructed.

"Aubrey-Oxdrift" Road, between lots 3 and 4, Concession 6,  $\frac{1}{4}$  mile cut, stumped and grubbed,  $\frac{1}{2}$  mile graded and ditched, 2 timber culverts constructed, 420 ft. of cross-laying, and 150 yds. of gravel used in surfacing and repair.

*Townline between Aubrey and Eton:*

"Snider's Road," across lots 1, 2 and 3, 1 mile stumped and grubbed,  $1\frac{1}{2}$  miles graded and ditched, 5 timber culverts constructed, 365 ft. of road cross-laid, and 300 ft. of creek cleaned out to secure drainage.

*Township of Drayton:*

"Road to Alcona Station," between lots 1 and 2, across Concession 1, between Concessions 1 and 2, across lot 2, between lots 2 and 3, across Concessions 2 and 3, and across lot 2, Concession 2 from foregoing to station, 3 miles cut and burned 66 ft. wide, 3 miles stumped and grubbed 35 ft. wide,  $1\frac{3}{4}$  miles graded, 3,540 ft. ditched, 2 stone culverts constructed,  $\frac{1}{2}$  mile of road cross-laid, and 900 cu. yds. of gravel used in surfacing.

*Township of Eton:*

Between lots 6 and 7, across north half Concession 4 and south half Concession 5, between lots 7 and 8, across Concession 4 and south half Concession 5, between lots 8 and 9, across south half Concession 5, between Concessions 3 and 4, across lots 7 and 8, and between Concessions 4 and 5, across parts of lots 6, 7 and 8,



.38 mile cut out 66 ft. wide, .65 cut out 35 ft. wide, 1.65 miles stumped and grubbed, 8,216 ft. ditched, 3 timber culverts constructed, and 110 yds. of cross-laying repaired.

Between lots 2 and 3, across Concessions 4 and 5 and between Concessions 4 and 5, across lot 2, 2.4 miles cut out and burned,  $2\frac{1}{2}$  miles stumped and grubbed, 1.85 miles graded,  $\frac{3}{4}$  mile ploughed only, 540 ft. ditched, and 9 timber culverts constructed.

Between lots 10 and 11, across Concessions 2 and 3, 1 mile cut out and graded, 2,475 ft. of ditching, 1 mile of repairs, and 4 timber culverts put in.

Between Township of Eton and Township of Wainwright, across Concessions 2 and 3,  $\frac{1}{2}$  mile cut out,  $1\frac{1}{4}$  miles stumped and grubbed, 2 miles graded, 1,085 ft. of ditching, and 5 timber and 1 iron culvert constructed.

#### *Townships of Vanhorne and Zealand:*

“Sandy Beach Road,” between Concessions 4 and 5, across lots 1 and 2 Vanhorne, and 23 Zealand,  $1\frac{1}{2}$  miles brushed out, 310 ft. ditched, 1 culvert repaired, and  $1\frac{3}{4}$  miles dragged.

#### *Township of Wainwright:*

Between lots 4 and 5, across Concessions 1 to 4, between lots 3 and 4, across north half Concession 1, between lots 2 and 3 across north half Concession 1 and south half Concession 2, between Concessions 1 and 2 across lots 1 to 4 and across lot 23 Zealand Township, and between lots 22 and 23 across north half Concession 7 Zealand,  $3\frac{1}{4}$  miles cut out,  $\frac{1}{2}$  mile stumped and grubbed,  $5\frac{1}{4}$  miles graded, 5,678 ft. of ditching, 9 timber and 3 iron culverts constructed, 1 bridge built, 885 cu. yds. gravel used in surfacing, and the whole road dragged and washouts repaired.

#### *Township of Wabigoon:*

Between lots 8 and 9 across north half Concession 3 and south half Concession 4, between lots 2 and 3 across Concession 5 and north half Concession 4, between Concessions 5 and 6 across lots 3-12, and on the Trunk Road from Vermilion Bay on lot 5, Concession 4, Langton, to Quibel on lot 8, Concession 5, Wabigoon, 5 miles cut out and burned,  $2\frac{1}{2}$  miles stumped and grubbed,  $3\frac{1}{2}$  miles graded, 3,925 feet of ditching, 22 timber culverts and 1 timber bridge constructed. 68 yards of gravel used in repairing, and dragging carried on over a distance of  $12\frac{1}{2}$  miles of road.

#### *Township of Zealand:*

Between Concessions 8 and 9 across lot 19, and between lots 19 and 20 across Concessions 7, 8 and part of 9,  $1\frac{1}{2}$  miles cut out, stumped and grubbed,  $\frac{1}{3}$  mile graded, 4,650 feet of ditching, 3 timber culverts and one bridge constructed, 942 yards of gravel used in surfacing and repair and one mile dragged.

## MATHESON DISTRICT.

*Township of Beatty:*

Between lots 9 and 10 across Concessions 1 and 2, 2 miles graded, 400 feet of offtake ditching, 11 timber culverts and 1 timber bridge, 20 x 16 x 6 constructed.

*Townline Townships of Beatty and Hislop:*

Across lots 1-3, 1 timber culvert constructed and holes in 1½ miles of road, caused by bush fires, repaired.

*Townline Townships of Beatty and Carr:*

Across Concessions 3 and 4, 1½ miles gravelled.

*Township of Benoit:*

Between Concessions 1 and 2 across lots 4-8, 15 timber culverts constructed.

*Townline Townships of Benoit and Cook:*

Across lots 6-8, ¾ mile cut out.

*Township of Bond:*

Between lots 2 and 3 across Concession 3, ⅓ mile cut and burned.

Between lots 2 and 3 across Concession 5, 7-10 miles burned, stumped, grubbed and graded, 1,700 feet of offtake ditching, and 9 timber culverts constructed.

*Township of Bowman:*

Trunk Road south-east from Matheson, Concessions 5 and 6, lot 4, ½ mile gravelled, 66 feet offtake ditching, 2 timber culverts constructed, 1 mile of road regraded.

Between Concessions 4 and 5 across lots 8-10, ¼ mile burned. Between lots 10 and 11, Concession 6, one mile graded, 300 feet offtake ditching, 6 timber culverts and 1 timber bridge, 80 x 16 x 8, constructed.

Between lots 6 and 7, Concession 4, ⅓ mile graded and 1 timber bridge 20 x 16 x 8 constructed.

Between lots 2 and 3, Concession 3, 1 mile cut and burned.

*Town Lines between Bowman and Carr, Bowman and Currie and Currie and Taylor:*

1½ miles gravelled, 3 bridges repaired, 4 miles regraded, 2 timber culverts constructed, 1,500 feet side ditching, 1 mile repaired.

Across Concessions 4 and 5, Bowman and Currie, 1,540 feet offtake ditching, 5 timber culverts constructed, 3,868 feet muskeg covered with clay and one mile dragged.

*Township of Carr:*

Trunk Road through Concession 2, ½ mile gravelled.

Between lots 4 and 5, Concessions 1 and 2, 1 bridge repaired, 1 bridge constructed.

Between Concessions 2 and 3, lot 5, 3 concrete culverts, 2 timber bridges, and  $\frac{1}{4}$  mile of road regraded.

Between Concessions 4 and 5, lots 5-8, 2 miles graded, 8 timber culverts.

Between Concessions 3 and 4, lots 5 and 6, 1 mile burned, stumped and grubbed.

#### *Townline Townships of Currie and Bond:*

Across Concession 3, 1,650 feet of road cut and burned, 66 feet wide.

#### *Township of Hislop:*

Between lots 3 and 4, Concessions 4 and 5,  $1\frac{3}{4}$  miles cut and burned, 1 mile stumped and grubbed and 1 timber bridge, 106 ft. x 16 ft. x 10 ft. constructed.

Between Concessions 5 and 6, lots 2 and 3, 1 mile cut, burned, stumped and grubbed.

Between Concessions 3 and 4, lots 4 and 5, 1 mile cut, burned, stumped and grubbed.

Between Concessions 2 and 3, lots 10 and 11, 1 mile cut, burned, stumped and grubbed.

Between Concessions 5 and 6, lot 10, covering of bridge repaired.

#### *Townline Townships of Hislop and Playfair.*

Across lots 9 and 10, 1 mile stumped, grubbed and graded, 875 feet offtake ditching and 4 timber culverts constructed.

#### *Township of Maisonville:*

Between Concessions 1 and 2, lot 7, 1 timber culvert and 2 timber bridges constructed.

#### *Township of Playfair:*

Between Concessions 5 and 6, lot 4, bridge over Black River repaired, and 1 timber culvert repaired.

Between lots 3 and 4, Concession 3, 1 mile of road burned 66 ft. wide.

Between lots 2 and 3, Concession 5, 1 mile graded, 300 feet of offtake ditching, 5 timber culverts and 1 timber bridge constructed.

Between Concessions 5 and 6, across lots 9-11,  $11\frac{1}{2}$  miles graded, 700 feet offtake ditching, 3 timber bridges and 6 timber culverts constructed.

Between lots 8 and 9 through Concession 6, 1,980 feet of muskeg road covered with clay.

Trunk Road through Concession 5 across lots 5 and part of 4, 3,498 feet graded, 800 feet of offtake ditching and 3 timber culverts constructed.

Between lots 2 and 3, Concession 6, 1 mile graded, 500 feet offtake ditching and 8 timber culverts constructed.

#### *Township of Stock:*

Between Concessions 1 and 2 across lots 3-6, 2 miles stumped, grubbed and graded, 1,000 feet offtake ditching, 8 timber culverts and 2 timber bridges constructed.

Between lots 2 and 3, Concession 2,  $\frac{1}{2}$  mile stumped, grubbed and graded, 500 feet offtake ditching and 4 timber culverts constructed.

Between Lots 4 and 5, Concession 5, 2 miles side ditching and 1,518 feet offtake ditching.

Between Concessions 4 and 5, across lots 1-4, 1 mile burned, stumped and grubbed,  $1\frac{1}{2}$  miles graded, 900 feet offtake ditching and 8 timber culverts constructed.

#### *Townline Townships of Stock and Taylor:*

Across Concessions 1 and 2 and part of 3,  $2\frac{1}{2}$  miles gravelled.

#### *Township of Taylor:*

Between lots 8 and 9 and between Concessions 5 and 6, 2 miles gravelled, 8 timber culverts constructed and 2 miles repaired.

Between lots 2 and 3, Concessions 1 and 2,  $\frac{1}{2}$  mile burned, stumped and grubbed, 2 miles graded, 300 feet gravelled, 800 feet offtake ditching and 12 timber culverts constructed.

Between Concessions 4 and 5, lot 11, 1 timber bridge 122 ft. x 16 ft. x 11 ft. constructed.

Between lots 10 and 11, Concessions 1 and 2, 347 feet cut out, 1 mile stumped, grubbed and graded, 2,838 feet side ditching, 3 timber culverts constructed and 2 repaired.

Between Concessions 2 and 3 across lot 6, 1,000 feet of muskeg road covered with clay.

Between lots 4 and 5, Concession 5, 1 mile burned, stumped and grubbed.

Between Concessions 3 and 4, lot 3,  $\frac{3}{8}$  mile graded, and 2 timber culverts constructed.

Between Concessions 1 and 2, lots 11 and 12, 1 mile cut and burned.

#### *Townline Townships Taylor and Walker:*

Across lots 2-6,  $2\frac{1}{2}$  miles stumped and grubbed, graded and culverts and bridges constructed.

Trunk Road, Concessions 1 and 6, 4,620 feet graded, 200 feet offtake ditching, and 3 timber culverts constructed.

#### *Township of Walker:*

Between Concessions 2 and 3, lot 9, 1 timber culvert constructed.

Between Concessions 2 and 3, lot 8,  $\frac{1}{2}$  mile stumped, grubbed and graded and 2 timber culverts constructed.

Between Concessions 4 and 5 across lots 9-11,  $1\frac{1}{2}$  miles graded, 925 feet of offtake ditching, and 7 timber culverts constructed.

Between lots 10 and 11, Concession 1,  $\frac{1}{2}$  mile burned, stumped and grubbed.

Between lots 4 and 5, Concessions 1 and 2, 2 miles cut, burned, stumped and grubbed.

Between lots 10 and 11, Concession 3,  $\frac{1}{2}$  mile burned, stumped, grubbed and graded, 600 feet offtake ditching and 2 timber culverts constructed.

Between lots 8 and 9, Concession 3,  $\frac{1}{2}$  mile burned, stumped and graded and 2 timber culverts constructed.



## MUSKOKA DISTRICT.

*Road from Utterson to Parry Sound:*

In the Township of Stephenson and on the Watt-Stephenson townline, 5½ miles graded, 16,500 feet ditching, 1 timber, 1 stone and 5 iron culverts installed and 208 cubic yards gravel used in surfacing and repairs.

*Road from Falkenburg to Beatrice and North to Ufford Road:*

In the Townships of Macaulay and Monck and on the Watt-Stephenson townline, 5 miles graded, 1,697 cubic yards gravel used in surfacing and repairs, one mile of ditching, 3 stone and 3 metal culverts installed, and 15½ miles dragged.



Road construction—Muskoka District.

## DISTRICT OF NIPISSING.

*Trunk Road Callander to Mattawa:*

In the Township of Ferris, between Concessions 8 and 9 across lots 10 to 22 and between lots 9 and 10 across Concessions 7 and 8, 2 miles cut out, 10 miles of dragging, 1 mile ditching, 4 timber and 11 stone culverts installed, and 2,330 cubic yards of gravel used in surfacing and repairs.

*Road from Feronia to Widdifield:*

In the Township of Widdifield, 3½ miles of road cut and burned 66 feet wide, stumped and grubbed 26 feet wide, ready for grading; this connects up the Widdifield settlement with the Town of North Bay.

*Township of Chisholm:*

Between lots 10 and 11 across Concessions 10 and 11; between Concessions 10 and 11 across lots 6-15; between lots 5 and 6 across Concessions 11 and 12; between

Concessions 12 and 13 across lots 1 to 5 on the Chisholm Road,  $2\frac{1}{2}$  miles cut out,  $\frac{1}{2}$  mile stumped and grubbed, 4 miles graded, 826 cubic yards of gravel used in surfacing and repairs, 4,240 feet of ditching, 9 timber culverts constructed and 9 miles dragged.

*Township of Widdifield:*

On the Trunk Road between North Bay and Trout Mills,  $1\frac{1}{2}$  miles brushed out, 660 cubic yards gravel used in surfacing and repairs, 450 feet of ditching, 2 miles dragged, 1 timber culvert constructed.

*Townships of Himsworth and Chisholm:*

On the line between Concessions 12 and 13 across lots 1-15, Himsworth, and 1-5, Chisholm,  $5\frac{1}{2}$  miles graded and dragged, 166 cubic yards gravel used in surfacing and repairs, 1 timber and 8 stone culverts constructed.



Newly-made road—Parry Sound District.

PARRY SOUND DISTRICT.

*Road from Barnesdale to Footes Bay:*

In the Township of Conger, from Barnesdale, southwards,  $\frac{3}{4}$  mile of road was cut out, stumped and grubbed.

*Road from Powassan to Nipissing and Restoule:*

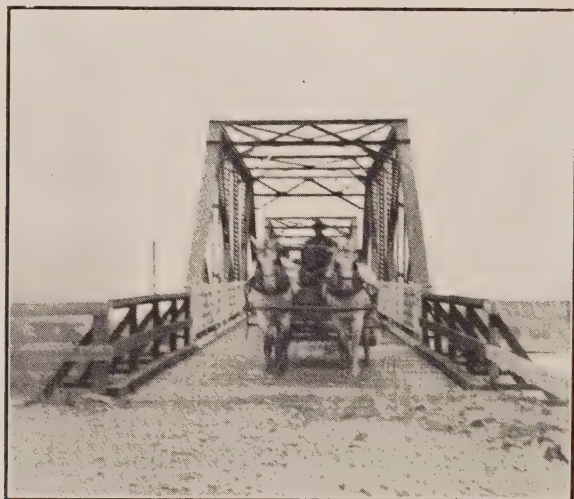
From lot 14, Concession 16, Gurd, to lot 27, Concession 6, Nipissing, between Nipissing Village and Restoule, 1 mile graded, 630 cubic yards gravel used in surfacing and repairs, 17 timber culverts installed and one bridge (timber and stone) constructed.

In the Township of Himsworth, 130 cubic yards of gravel used in surfacing and repairs between lots 20 and 21 across Concession 15. Between Powassan and

Nipissing, 10 miles were dragged and  $\frac{1}{4}$  mile repaired; 117 yards of gravel used and 1 bridge repaired from north-east corner of lot 11, Concession 10, to south-west corner lot 13, Concession 10, Nipissing, and lot 25, Concession 18, Himsworth.

In the Township of Nipissing 882 cubic yards of gravel used and  $1\frac{1}{4}$  miles road dragged across lots 27 and 28, Himsworth, and lots 1-8, Nipissing, between Concessions 18 and 19.

Across lots 15 and 16, Concession 9, north boundary lot 13, Concession 10 to south-east corner lot 20, Concession 8, across lots 16-20, Concession 7; lot 14, Concession 10 to lot 21, Concession 7,  $1\frac{3}{4}$  miles cut out, 2 miles stumped and grubbed,  $3\frac{3}{4}$  miles graded, 1,882 yds. gravel used in surfacing, etc., 5,880 feet side ditching, 16 stone, 9 timber and 7 timber and stone culverts constructed and 2 miles of road repaired.



Steel Bridge—Timmins, Mattagami River.

#### *Commanda Road:*

In the Township of Gurd.  $2\frac{1}{2}$  miles cut out, 2 miles stumped and grubbed,  $3\frac{1}{2}$  miles graded, 1,318 cubic yards gravel used in surfacing and repairs, 7,920 feet of ditching, 33 timber, 6 stone and 6 iron culverts constructed,  $\frac{1}{2}$  mile cross-laying 12 feet wide, 8 miles of road dragged, and 320 rods wire fencing.

### PORCUPINE DISTRICT.

#### *Township of Mountjoy:*

Trunk road north of Mattagami River from bridge on lot 2, Concession 2 to line between lots 9 and 10,  $3\frac{1}{4}$  miles graded, 500 feet of cross laying 10 feet wide, 3.2 miles ditching,  $\frac{1}{2}$  mile dragged, 4 timber culverts constructed and 1,110 yards of gravel used in surfacing and repairs.

Trunk Road south of Mattagami River from Mountjoy Bridge on lot 2, Concession 2 to half-way across lot 5, Concession 1,  $2\frac{3}{4}$  miles graded and 200 cubic yards gravel used in surfacing and repairs.



Trunk Road east of Mattagami River across Concession 5, 300 feet stumped and grubbed, 670 feet cross laying 16 ft. wide, 360 cubic yards filling and 400 cubic yards gravel used in surfacing and repairs. Between lots 4 and 5, across Concession 3 and north half Concession 2,  $\frac{1}{2}$  mile burned, 1 mile grubbed, 250 ft. cross laying, 11,040 ft. ditching and 5 timber culverts constructed.

*Townline Townships of Shaw and Delora:*

Timber bridge constructed over Shaw Creek, 40 ft. x 16 ft.

*Township of Tisdale:*

On Lot 12, Concession 2, 75 acres cut and burned in Timmins fire guard.

On the Trunk Road from South Porcupine to Schumacher, considerable grading and gravelling was done under the supervision of the Township Council. A contract for approximately 2,000 yards of gravel was let, and at least an equal quantity was placed on the road by day labour. Operations were carried on over approximately 4 miles of road, 1,400 feet of which was covered with rock, 18 feet wide, one clay cut 200 feet in length and one timber culvert constructed 25 ft x 5 ft. 6 in. x 4 ft. After sheeting with gravel, the road was graded, raked and rolled.

*Bridge over Mattagami River at Timmins:*

For a number of years a scow crossing on lot 2, Concession 2, Mountjoy Township, carried all the traffic into the agricultural portion of the township from the Town of Timmins. This has been replaced by a steel bridge, in two spans, 125 feet each, which was erected on substructure partially completed in 1919.

## RAINY RIVER DISTRICT.

*Trunk Road, Fort Frances to Rainy River:*

Starting in the Township of McIrvine at Fort Frances and running practically alongside the Canadian National Railway to Rainy River, in the Township of Attwood, a distance of approximately 60 miles, this road has been kept in very good condition. Dragging operations were carried on when weather conditions were favourable, gravel sheeting was placed where surface showed signs of wear, and soft spots were drained and afterwards gravelled. Four miles cut out or brushed, 27 $\frac{1}{2}$  miles regraded, 11,140 cubic yards gravel used in surfacing, 9,007 feet of ditching, 12 wood culverts constructed, two culverts and 8 bridges repaired, 60 cubic yards of stone and 60 cubic yards of clay used in filling.

*Main Roads:*

"Sleeman-Bergland Road," 5 miles, "Spohn Road," north from Rainy River, 4 miles and "Carpenter-Dobie Road," 4 miles were kept dragged and in fair condition.

*Carpenter-Dobie Townline:*

This four miles of road in addition to dragging had 110 rods covered with 222 yards of gravel and one timber culvert constructed.



*Township of Carpenter:*

Between lots 5 and 6 across Concession 5, 3,795 feet ditching.

*Townships of McCrosson, Tovell and Morson:*

In McCrosson Township between lots 2 and 3, north half Concession 3, and between Concessions 3 and 4, across lots 1 and 2, on line between McCrosson and Tovell across Concessions 4 and 6, and on line between lots 12 and 13 across Concessions 1 and 2, Morson, 2½ miles cut out, 1 mile stumped and grubbed, ½ mile graded, 1,640 feet ditching and 2 timber culverts constructed.

*Township of Nelles:*

Between Sections 7 and 8, south half, ¼ mile grading, 4,290 feet ditching and 1 timber culvert.

Between Sections 22 and 23, 1.2 miles cut out, 1 mile stumped and grubbed, and graded, and 6,625 feet of ditching.

*Township of Potts:*

Between lots 2 and 3 across Concessions 1, 2 and 3, one mile graded and 660 feet ditched.

*Township of Tovell:*

Between Concessions 2 and 3 across parts of lots 7 and 8 and across lot 11, ¼ mile cut out 66 feet wide, 1-10 mile graded, and 300 feet ditched.

## SAULT STE. MARIE DISTRICT.

*Trunk Road, Sudbury to Sault Ste. Marie:*

This road, two hundred miles in length was divided for maintenance purposes into three divisions, the western under J. Leacock, the central under J. E. Wright and the eastern under H. C. Halford, as foremen. A regular patrol was established in order that washouts and bad places might be promptly repaired. At the same time one-third of the entire distance was re-gravelled and other betterments made.

The section between Algoma and Cutler, 19 miles in length, on which work commenced in 1919, was completed with the exception of the surface gravelling of four miles. One 20-foot reinforced concrete bridge was built on this section. Particular care was taken on this section with grades, alignment and drainage and all swampy stretches were drained and stone filled.

Owing to shortage of labour and the necessity of finishing the above section by the middle of July, it was not possible to run the rock crushing plant to capacity. A sufficient quantity was crushed, however, to surface some of the softer portions of the roadbed. The plant was moved to the vicinity of Webbwood, where it is installed ready for operation in the ensuing season.

A fill of five thousand yards was made at the Town of Blind River to replace a condemned wooden structure leading to the bridge over the Blind River. This fill was ripped, gravelled and railed. The following figures give a summary of

the work carried on during the season: 28.1 miles were cut out, 9.5 miles brushed, 11 miles burned, 2.17 miles stumped and grubbed, 28.41 miles graded, 14 timber and 73 iron culverts were constructed, 2 rebuilt and 2 repaired, 4 bridges repaired, 138 miles dragged, 109 miles repaired, 580 yards of crushed stone and 159,084 yards of gravel used in surfacing, 1,084 yards of stone fill, 98,615 feet of ditching and 6 miles of ditches cleaned.

*Goulais Bay Road:*

From Sault Ste. Marie to Goulais Bay, in the Township of Pennefather, general repairs and dragging, 2 timber and 5 iron culverts constructed, 180 feet of ditching, and 293 yards of gravel used in surfacing. The diversion at Calamity Hill affording a grade of 9 per cent. in place of one of 20 per cent. was completed, three thousand yards of earth and hardpan being moved.



Macadam road under construction.

*Shaw Road, Township of Bridgeland:*

One 90-foot bridge, one 35 feet and one 30 feet repaired.

*Wells Road, Township of Wells:*

Six miles brushed, 4 timber culverts constructed, 7,940 ft. of ditching, and 780 cu. yds. of gravel used in surfacing and repairs.

*Township of Louise:*

Between lots 7 and 8, Concession 5, and across lot 8, Concession 4,  $\frac{3}{4}$  mile stumped and grubbed,  $\frac{1}{4}$  mile graded, 250 ft. ditched, and  $\frac{1}{4}$  mile repaired.

Between lots 7 and 8, Concession 5, and across northerly end of lots 8 and 9, Concession 4, 1 mile cut out, stumped, grubbed and ditched, 4 timber culverts constructed,  $\frac{1}{2}$  mile repaired using 50 cu. yds. of gravel.

*Campement d'ours Road:*

From north-east side of Camp d'ours for 70 rods south,  $\frac{1}{4}$  mile of road dragged, 1,860 ft. of ditching, 2 timber and 1 iron culvert constructed, and 255 cu. yds. of gravel used in surfacing. The cut on the hill at the northerly end of this road was completed, leaving a final grade of 11 per cent.

Across Island from St. Joseph to Kensington Point, 8 timber culverts constructed,  $1\frac{3}{4}$  miles dragged, 4,620 ft. of ditching, and 631 cu. yds. gravel used in surfacing and repairs.

*St. Joseph Island:*

In the Townships of Jocelyn, St. Joseph and Hilton,  $2\frac{1}{2}$  miles cut out,  $\frac{1}{2}$  mile graded, 3 iron, 6 wooden and 1 stone culverts constructed, 169 miles of dragging (several portions of the roads being dragged more than once) 13,233 ft. of ditching, and 507 cu. yds. of gravel used in surfacing and repairs.

*Manitoulin Island:*

*Township of Allan:*

Between Concessions 8 and 9, across lots 1 to 28 on the Gore Bay-Little Current Road,  $1\frac{1}{2}$  miles dragging, 1 mile grading, 1,017 cu. yds. of gravel used in surfacing and repairs, and 1 timber and stone culvert constructed.

*Townships of Assiginack and Sheguindah:*

Five miles of the road running northwards from Manitowaning were repaired, 480 cu. yds. of gravel used.

*Township of Bidwell:*

Between Concessions 10 and 11, across lots 16 to 26, on the Gore Bay-Little Current Road,  $\frac{1}{4}$  mile cut out, stumped and grubbed 66 ft. wide, 2 miles graded, 1 stone and 5 wooden culverts constructed,  $1\frac{1}{2}$  miles dragged, 1,300 cu. yds. earth fill over flat rock as a foundation for gravel, 1,280 ft. of ditching, and 435 yds. of gravel used in surfacing and repairs.

*Township of Billings:*

Between Concessions 14 and 15, across lots 21 to 30, Billings, and across lots 1 to 4, Allan, on the Gore Bay-Little Current Road, 2.5 miles graded, 1 timber culvert constructed, and 210 cu. yds. gravel used in surfacing and repairs.

Between lots 21 and 22, across Concessions 9, 13 and 14 on same road,  $3\frac{3}{4}$  miles dragged, 4 timber culverts constructed, and 265 cu. yds. gravel used in surfacing and repairs.

*Township of Burpee:*

Between Concessions 7 and 8, across lots 17 to 22 on the road from Gore Bay to Silverwater,  $\frac{1}{4}$  mile cut out, stumped and grubbed, 2 miles graded, and 239 yds. gravel used in surfacing and repairs.

*Township of Campbell:*

Between Concessions 2 and 3, across lots 26 to 29 and between lots 25 and 26, across Concessions 3 and 4 on the road from Gore Bay to Providence Bay,  $1\frac{1}{2}$  miles cut out,  $1\frac{1}{4}$  miles graded, 333 cu. yds. gravel used in surfacing and repairs, and  $\frac{1}{2}$  mile dragged.

Between Concessions 10 and 11, across lots 1 to 10 and on townline between Campbell and Carnarvon, across Concessions 11 and 14 on same road,  $1\frac{1}{4}$  miles cut out,  $\frac{3}{4}$  mile stumped and grubbed,  $2\frac{1}{4}$  miles graded, 857 cu. yds. gravel used in surfacing and repairs, 1 stone and wood and 2 stone culverts constructed.

*Township of Carnarvon:*

Between Concessions 6 and 7, across lots 1 to 5 on road from Providence Bay to Mindemoya,  $1\frac{1}{4}$  miles graded and 600 yds. gravel used in surfacing and repairs.

Between Concessions 6 and 7, across lots 7 to 13 on Providence-West Bay Road, and along eastern shore of Mindemoya Lake on Concessions 1, 2 and 3 and lots 16 to 23,  $\frac{1}{4}$  mile graded and 124 cu. yds. gravel used in repairs.

*Township of Dawson:*

Along western shore of Mildrum Bay on road from Silverwater on lots 23 and 24,  $\frac{1}{2}$  mile graded and 150 yds. of gravel used in repairs.

*Township of Gordon:*

Through lots 22 and 23, Concessions 2 to 5, on road to Indian Point Bridge,  $2\frac{1}{4}$  miles cut out,  $1\frac{1}{2}$  miles stumped,  $1\frac{1}{4}$  miles graded, 823 cu. yds. gravel used in surfacing and repairs, 5 timber and 7 stone culverts constructed.

Six miles of the road from Gore Bay to Providence Bay, along townline between Gordon and Allan, northerly side of Concession A to west boundary of lot 5, Gordon, and thence north to line between Concessions 9 and 10, Gordon, were repaired.

*Township of Robinson:*

Between lots 3 and 4 across Concession 5, between Concessions 5 and 6 across lots 4 and 5, between lots 5 and 6 across Concession 6, and across Concession 7 on lot 6, road from Silverwater to Gore Bay,  $1\frac{1}{2}$  miles cut out,  $1\frac{1}{4}$  miles stumped and grubbed,  $1\frac{1}{2}$  miles graded, 1,291 cu. yds. gravel used in surfacing and repairs, 2 timber, 3 stone and 1 timber and stone culverts constructed, and 1 mile dragged.



## SUDBURY DISTRICT.

*Shining Tree Road:*

In the Township of Askwith,  $3\frac{1}{4}$  miles cut out,  $2\frac{2}{5}$  mile stumped and grubbed,  $\frac{1}{2}$  mile graded, 7,509 cu. yds. gravel used in surfacing and repairs, 1 mile ditching, 18 culverts constructed, and 6,030 ft. of cross-laying. In all, about 6 miles of road was sheeted and repaired.

*Sudbury to Chelmsford:*

In the Township of Rayside, between Murray Mine and Azilda, 68 cu. yds. of gravel and 60 cu. yds. of crushed rock were used in repairs over a distance of 3 miles.

From Chelmsford to 4 miles east of Azilda, in the Townships of Balfour and Rayside, 12 miles were re-graded and 2 iron and 3 timber culverts constructed.

*Sudbury to Capreol:*

In the Townships of McKim and Blezard, from Sudbury, north for 5 miles, 1,161 cu. yds. of gravel used in surfacing and repairs and 1 iron culvert constructed.

*Copper Cliff to Creighton:*

In the Township of Waters, from 4 miles west of Copper Cliff to 4 miles east of Creighton, this road was repaired with 360 cu. yds. of gravel.

*Warren-St. Charles Road:*

On the section from 3 miles south of Warren to 6 miles south of Warren 547 cu. yds. of gravel used in repairs.

From St. Charles south, a distance of 6 miles, 1,878 cu. yds. of gravel used in repairs.

*Sturgeon Falls to Field:*

In the Townships of Field and Springer,  $4\frac{3}{4}$  miles graded, 2,186 cu. yds. of gravel used in surfacing and repairs, and 3 timber culverts constructed.

*Sturgeon Falls to Smoky Falls:*

In the Township of Springer,  $2\frac{1}{2}$  miles cut out,  $3\frac{1}{2}$  miles graded, 2,308 cu. yds. gravel used in surfacing and repairs, 1,820 ft. of ditching, and 5 timber culverts constructed.

## THUNDER BAY DISTRICT.

*International or Scott Highway:*

This highway has carried a heavy traffic from the Minnesota boundary at Pigeon River, to Fort William. Inspection of the road towards the end of the season gave evidence that the general maintenance work carried on had preserved the road surface generally and, notwithstanding the heavy traffic, it was in very fair condition for travel.

One bridge was raised 3 ft., 6,764 cu. yds. of gravel or shale were used in patching and re-surfacing, 39 timber and 6 iron culverts were constructed, and 35 miles of the road was dragged when weather conditions suited for this form of maintenance.

At one rather dangerous curve a large clay cut was made and the road widened sufficiently to minimize the danger, and to carry this out successfully necessitated the construction of high rip rap to prevent the fill sliding down the banks of the Pigeon River. At other curves the road was kept brushed out to provide as clear a view ahead as possible.

In the latter part of the season an attempt was made to establish a maintenance patrol with considerable success; the road was repaired with gravel, dragged, and ditched along the Horn Hill; 2 timber culverts were reconstructed and 300 ft. of ditches opened.



International Bridge—Pigeon River, Port Arthur-Duluth Road.

#### *Loon Lake or Black Bay Road:*

Running easterly from Port Arthur, it is intended that work on this road will be continued until it reaches Nipigon and effectually opens up the fine agricultural Townships of Dorion, Stirling and Nipigon.

The season's efforts were confined mainly to the Township of McGregor, and consisted of repairs and improvements to the existing road, and new construction along the Hydro-Electric pole line to the McKenzie River, where concrete abutments were constructed to carry a 60-ft. steel girder bridge. A small amount of new work was done east of the McKenzie but only in connection with hill cutting in making the eastern approach to the bridge.

Four miles of road were brushed out, 4.75 miles were cut, 5 miles stumped, 3 miles grubbed, 3 miles graded, and  $5\frac{1}{4}$  re-graded, 4,850 cu. yds. of gravel was

used in re-surfacing, etc., 21,000 ft. linl. of ditching, 26 culverts constructed, 5 miles dragged, and 4 miles widened. These operations were carried on over about 20 miles of road.

*Arthur St. Road:*

This, the main road running west from Fort William through Neebing and Paipoonge Townships, was maintained in good condition. The road was dragged several times,  $2\frac{1}{2}$  miles cut out, 5 miles re-graded, 1 culvert constructed, 400 ft. ditching, and 2,897 cu. yds. of gravel used in re-surfacing and repairing bad spots.

*Olliver Road:*

In a parallel direction to the Arthur St. Road, this is the main road west from Port Arthur, through McIntyre, Olliver and other Townships. Twelve miles of dragging was done on the road and 272 cu. yds. of gravel used in surfacing a bad clay spot in Olliver Township.

*Kakebeka-Hymers Road:*

On the line between Concessions 6 and 7 and between lots 6 and 7, in the Township of O'Connor, 1,459 cu. yds. of gravel was used in re-surfacing and repair of this road.

*Silver Mountain Road:*

Through the Townships of Gillies, O'Connor and Paipoonge, this road runs in a south-westerly direction from the Arthur Street Road, and the season's work included: 3 miles of cutting,  $3\frac{1}{2}$  miles of stumping and grubbing,  $4\frac{1}{4}$  miles of grading, 300 ft. of ditching, 13 wooden culverts and 1 stone culvert were constructed, 1,000 cu. yds. of gravel was used in re-surfacing and repair, and 2 miles were dragged.

In addition to the foregoing, an amount of \$480 was spent on this road through the Township of Lybster—this is included in the report under that township.

*Dawson Road:*

Running north-westerly from Port Arthur through the Townships of McIntyre and Ware to Kaministiquia, this road carries a heavy traffic and will require a considerable expenditure to put it in good condition. Gravelling over the clay stretches, drainage and hill cutting are necessary, and it is the intention to proceed with this as soon as possible. This season's work consisted of  $1\frac{1}{2}$  miles of cutting out, brushing, stumping and grubbing, 462 ft. of ditching, the construction of 5 wooden culverts, the repair of 3 others, and the repair of the worst spots in the road with gravel.

*Township of Conmee:*

Road cut, graded, ditched and 6 culverts constructed across lot 10 on south boundary. Seven and three-quarter miles were re-graded, 6 culverts built, 395 cu. yds. gravel and 93 yds. crushed stone were used in surfacing and repairing on the road across Concession 1, and thence between lots 6 and 7, lots 4 and 5, and east side of lot 1.

*Township of Dorion:*

On line between lots 12 and 13 from 5th Concession line to 3rd Concession line,  $\frac{3}{4}$  mile was brushed 66 ft. wide, 561 cu. yds. gravel was used in surfacing, etc., and 4 timber culverts were constructed.

From lot 10, Concession 3, to lot 7, Concession 6, 1,650 ft. of ditching, 413 yds. of gravel used on surface, 9 timber culverts constructed, and 1 bridge on lot 7, Concession 6, repaired. Operations for the season were carried on over a distance of 15 miles.

*Township of Gorham:*

One bridge repaired and  $3\frac{1}{2}$  miles dragged on east boundary, north from McIntyre townline.

Four culverts constructed, 600 ft. ditched,  $\frac{1}{4}$  mile graded, and 500 cu. yds. gravel used in surfacing of road between Concession 5 and Concession 6, across lot 18, and road between lots 16 and 17, across parts of Concession 3 and Concession 4.

One and a quarter miles cut out, 1 mile stumped and grubbed,  $\frac{3}{4}$  mile graded, 1,370 ft. ditched, 2 stone and 2 wooden culverts constructed, and 12 miles of cross-laying on road between Concessions 3 and 4, across lots 6, 7, 8, and part of 9.

*Township of Gillies:*

One and a quarter miles of cutting,  $\frac{3}{4}$  mile burning,  $1\frac{3}{4}$  miles stumping and grubbing, 3 miles grading, 2,940 ft. ditching, 8 concrete and 9 timber culverts, 1 bridge repaired, and 1 mile dragged on the side roads between lots 8 and 9, Concessions 1, 4 and 5, between lots 6 and 7, Concessions 2 to 5 inclusive, between lots 4 and 5, Concession 1, between Concessions 1 and 2, across lots 9 and 10, between Concessions 5 and 6, across lots 8 and 9, and on lot 7, Concession 6.

*Township of Lybster:*

On the main road to Silver Mountain, 7 miles, road between lots 4 and 5 and between lots 8 and 9, road running north-west across lots 9 to 12, and road through lots 9 to 12 in Concession 3 to 5, there were  $3\frac{1}{4}$  miles cut out, 15,840 ft. of ditches cleared, 46 timber culverts re-built, and 8 miles dragged.

*Township of Marks:*

One-half mile cut out, 2 miles stumped and grubbed, four miles graded, 1,400 ft. ditched, 14 timber culverts and 2 bridges constructed,  $\frac{1}{2}$  mile cross-layed, and 1 mile dragged on the following: line between Concessions 6 and 7, lot 1, across lot 5, Concession 3, between Concessions 1 and 2, lots 1 and 2, between lots 6 and 7, Concession 3, between lots 4 and 5, Concessions 1 and 3, between lots 2 and 3, Concessions 1 and 2, and on eastern boundary south half Concession 4.

*Township of Pearson:*

Six and a half miles cut out, 6 miles stumped and grubbed,  $3\frac{1}{4}$  miles graded, 3,150 ft. ditched, 27 timber and 1 stone culvert constructed on line between lots 22 and 23 across Concessions 1 to 3, line between lots 20 and 21, Concession 3, line



between lots 17 and 18, Concession 2, and line between Concession 2 and 3, lots 18 to 20. On the road known as Pearson Trunk Road, situate on line between lots 6 and 7 across Concession 1 Scoble, and Concession 4 and 5 Pearson, thence along line between Concessions 3 and 4, across lots 7 to 10, south between lots 9 and 10, across Concessions 2 and 3, north-west across lot 11, Concession 4, between Concessions 4 and 5, across lot 12, and between lots 12 and 13, across Concession 5, had 1 bridge and two culverts repaired, 6 culverts constructed, and 3,035 ft. ditched.

#### *Township of Scoble:*

One mile of cutting and grading on east and west road across lots 1 to 12 on Concessions 1 and 2.



Sunday traffic—International Bridge, Pigeon River—Port Arthur and Duluth Railway.

#### *Township of Stirling:*

One mile and a half of the old Colonization Road was cut out 40 ft. wide, stumped and grubbed 20 ft. wide, cross-laid for 50 ft., and 1 culvert constructed.

#### *Township of Strange:*

Across lots 9 to 12 in Concession 2, the Trunk Road was cut out 40 ft. wide, 2 miles, and stumped and grubbed 20 ft. wide for  $1\frac{1}{2}$  miles.

#### *Township of Ware:*

On the line between Concessions 2 and 3 across lots 1 to 6, 3 miles were cut out,  $1\frac{3}{4}$  miles burned, and  $1\frac{1}{4}$  miles stumped and grubbed. On the road known as the "Old Mining Road," from Dawson Road, lot 18 to lot 13, Concessions 2 and 3 Ware, 1 mile was cut out 50 ft. wide,  $\frac{1}{2}$  mile stumped and grubbed, 4,370 ft. ditched 3 timber culverts constructed, and 669 yds. of gravel used on this road, and repairs on the Dawson Road.

*Appendix No. 45.*

STATEMENTS FOR REPORT FOR THE YEAR ENDING 31st OCTOBER, 1920

## NEW LISKEARD DEMONSTRATION FARM.

Work carried on in connection with the Farm during 1920 consisted largely of land clearing and in production of an oat crop. Lack of any farm buildings made it altogether impracticable to attempt to handle a variety of grain crops or field root crops. Therefore, it was deemed advisable to sow only one grain crop, viz., oats. Sixty acres were seeded to oats, seven to O.A.C. No. 72 and the balance to O.A.C. No. 3. Of the sixty acres, forty-two were new land cropped for the first time. A very creditable crop was harvested, the quality number one—the No. 3 weighed forty pounds per measured bushel just as delivered from the threshing



O.A.C. No. 72 Oats, grown on the New Liskeard Demonstration Farm, 1920.

mill. An average yield of forty bushels was realized from the entire field, some parts of the field yielded sixty bushels per acre.

In addition to sixty acres of grain, twenty acres of hay crop was harvested, a total crop of eighty acres altogether on the farm.

Forty acres of new land was seeded down for hay for 1921. Twenty-six acres of new land were cleared during the summer and made ready for crop for next year.

The farm gave an approximate yield of:

Oats .....	2,500 bushels.
Hay .....	40 tons.
Straw .....	30 tons.

The most urgent need of the Farm at the present time is suitable farm buildings. The policy of growing and selling hay and grain is not in the best interests of the farm and certainly cannot be recommended to Timiskaming agriculture.

## SHORT COURSE IN AGRICULTURE AND SEED FAIR.

As in former years a Short Course and Seed Fair was held in the Judging Pavilion on the Farm. The following is a detail report on same:

The Department, in conjunction with the Agricultural Society, held a Short Course and Seed Fair from March 23rd to 26th.

## INSTRUCTORS.

Prof. C. A. Zavitz, O.A.C., Guelph, Ont.  
 E. G. Gordon, B.S.A., Live Stock Branch, Toronto.  
 H. G. Bell, Toronto, Ont.  
 J. H. Scott, Department of Agriculture, Toronto.

## LIST OF DONATIONS TO PRIZE LIST.

International Harvester Co., O'Grady Bros., Agents.....	\$25 00
The Massey-Harris Company, J. T. Goldthorpe, Agent .....	25 00
R. G. Howie, five bushels Abundance Oats, value.....	10 00
Hugh Carson Harness Co., Ottawa, The Edwards Agency, Agents, one club bag, value .....	15 00
B. F. Ackerman Harness Company, Peterboro, The Edwards Agency, Agents, set brass mounted halter bridles, value .....	10 00
Union Bank of Canada, New Liskeard, silver cup .....	
Imperial Bank of Canada, New Liskeard, silver cup .....	
The Fleury Plow Company, O'Grady Bros., Agents, one No. 21 Fleury Plow, value .....	22 00

List of prize winners as follows:

*Class 1, Oats, O.A.C., No. 3—*

- 1st, C. Thomas, Uno Park, Ont.
- 2nd, John Molitor, Earlington, Ont.
- 3rd, James Carter, New Liskeard, Ont.

*Section 2, Oats, O.A.C., No. 72—*

- 1st, G. C. Foster, Uno Park, Ont.

*Section 3, Oats, Abundance—*

- 1st, C. Thomas, Uno Park, Ont.
- 2nd, W. Hermiston, Uno Park, Ont.

*Section 4, Oats, Any Other Variety (White)—*

- 1st, G. C. Foster, Uno Park, Ont.

*Sweepstakes in Oats—C. Thomas, Uno Park, Ont.**Class 2, Wheat, Marquis Spring Wheat—*

- 1st, C. Thomas, Uno Park, Ont.
- 2nd, Robt. Ross, Thornloe, Ont.
- 3rd, J. M. Gray, New Liskeard, Ont.
- 4th, Geo. Walsh, New Liskeard, Ont.
- 5th, A. Doupe, Hanbury, Ont.

*Section 2, Wheat, Fall Wheat—*

- 1st, A. Doupe, Hanbury, Ont.

*Sweepstakes in Wheat—C. Thomas, Uno Park, Ont.**Class 3, Barley, Any Six Rowed Variety—*

- 1st, G. C. Foster, Uno Park, Ont.
- 2nd, Jno. Molitor, Earlington, Ont.
- 3rd, W. Hermiston, Uno Park, Ont.

*Class 4, Peas, Large Field Pea—*

- 1st, C. Thomas, Uno Park, Ont.
- 2nd, B. Irvine, Hanbury, Ont.
- 3rd, T. H. Nickle, Hanbury, Ont.



*Section 2, Peas, Small Field Pea—*

- 1st, A. Doupe, Hanbury, Ont.
- 2nd, Chas. Carter, New Liskeard, Ont.
- 3rd, E. David, New Liskeard, Ont.

*Sweepstakes in Peas—*C. Thomas, Uno Park, Ont.

*Class 5, Grasses, Alsike Seed—**Section 2—*

- 1st, J. R. Philp, R.R. No. 1, New Liskeard.
- 2nd, Geo. Walsh, New Liskeard, Ont.
- 3rd, Robt. Ross, Thornloe, Ont.

*Section 3, Grasses, Timothy Seed—*

- 1st, A. Doupe, Hanbury, Ont.

*Sweepstakes in Clover—*J. R. Philp, R.R. No. 1, New Liskeard.

*Class 6, Flax—*

- 1st, C. Thomas, Uno Park, Ont.



Field of O.A.C., No. 3 Oats, on the New Liskeard Demonstration Farm, 1920.

*Class 7, Potatoes, Irish Cobbler Type—*

- 1st, T. H. Nickle, Hanbury, Ont.
- 2nd, C. Thomas, Uno Park, Ont.

*Section 2, Potatoes, Green Mountain Type—*

- 1st, J. M. Gray, New Liskeard, Ont.
- 2nd, A. Doupe, Hanbury, Ont.
- 3rd, T. H. Nickle, Hanbury, Ont.

*Sweepstakes in Potatoes—*J. M. Gray, New Liskeard, Ont.

Lectures were held only in the afternoon as it was impossible for farmers to attend in the morning.

The attendance was very good although not as large as expected. This can be explained by the fact that a very large percentage of farmers and farmers' sons interested in Short Course work are always busy timbering during the winter.

The Seed Fair was excellent considering the poor harvest conditions of the previous falls.



## MATHESON FARM.

The above has now been seeded down and taken over by the Agricultural Department.

All of which is respectfully submitted.

W. G. NIXON,

*Acting Superintendent.*

## REPORT OF ONTARIO GOVERNMENT CREAMERY, NEW LISKEARD, ONTARIO.

*To the Honourable the Minister of Lands and Forests:*

SIR,—I beg to submit report of Creamery from November 1st, 1919, to October 31st, 1920.

As was expected on account of the very wet season in the fall of 1919, and the high price and scarcity of feed, a great many farmers disposed of a great number of their cows, and a great many that were kept over, came out of the stables in very poor condition, and it was well on in the summer before they were producing the amount of milk they otherwise would have. We also had two private Creameries in the outlying district which took a few of our patrons in the immediate vicinity of them. However, we are able to show an increase in the value of business done during the year, and the prices paid were the highest that ever were paid in the history of the Creamery business. One drawback to the dairy industry is the number of star boarders still in a number of the farmers herds; this coupled with scrub bull, is a detriment to the industry. However, we are glad to report from the number of individual cows we have under test, and the campaign on to eliminate the scrub bull, we can now look forward to greater strides in the dairy industry.

The total number of patrons for the past year was two hundred and fifteen. The Creamery is growing in favor each year on account of the work it saves the women on the farm, and the steady cash revenue on the fifteenth and thirtieth of each month.

There being a great deal more feed in the district this year and the fine open fall, we look forward to much larger production of cream this coming winter.

The following is a summary of business done since we started operations on the 18th of August, 1917, to October 31st, 1920:

Amount of cream received .....	838,176 lbs.
Amount of butter manufactured .....	267,897 lbs.
Value of butter manufactured .....	\$141,258 85
Paid patrons for cream .....	126,462 52

I have the honour to be, Sir,

Your obedient servant,

A. MACLACHLAN, *Manager.*

## SUMMARY OF EXPENDITURE

FOR THE SEVEN YEARS ENDING 31ST OCTOBER, 1920.

Northern and North-Western Ontario Development Fund.

Section	Summary of Expendi- ture, 23rd May, 1912 to 31st October, 1919	Expenditure for year ending 31st October, 1920	Total Expenditure to 31st October, 1920
	\$ c.	\$ c.	\$ c.
Section 1 (a) Works and Improvements .....	2,100 00		2,100 00
Section 1 (b) Roads .....	5,672,721 51	1,290,729 49	6,963,451 00
Section 1 (c) Farms .....	67,962 29	6,795 38	74,757 67
Section 1 (d) Creamery and Grain Elevators .....	31,362 57	7,011 97	38,374 54
Section 2 (1) Seed Grain .....	142,532 90	35,439 22	177,972 12
Section 2 (2) Cattle Purchase Account .....	18,720 61	405 45	19,126 06
Section 2 (6) Fire Protection .....		3,773 45	3,773 45
Returned Soldiers' and Sailors' Settlement Acts, 1917 and 1920 .....	971,173 27	202,465 24	1,173,638 51
	6,906,573 15	1,546,620 20	8,453,193 35
Settlers' Loan Act, Clause 9 (Amending Act, 1916) .....	485,083 81	64,317 82	549,401 63
	7,391,656 96	1,610,938 02	9,002,594 98

## STATEMENT OF EXPENDITURE

UNDER NORTHERN AND NORTH-WESTERN ONTARIO DEVELOPMENT ACTS, 1912 AND 1915.

FOR THE YEAR ENDING 31ST OCTOBER, 1920.

Districts and Sections.

	Expenditure year ending 31st Oct., 1920.
1. Kenora .....	\$107,396 18
2. Thunder Bay .....	116,850 73
3. Rainy River .....	71,062 50
4. Sault Ste. Marie .....	142,942 18
5. St. Joseph Island .....	7,077 17
6. Sudbury .....	129,845 13
7. Nipissing .....	55,567 41
8. Parry Sound .....	69,119 59
9. Muskoka .....	74,825 46
10. Simcoe .....	43,246 84
11. Pembroke, Mattawa, Petawawa .....	19,505 67
12. Manitoulin Island .....	33,758 64
13. Algonquin Park .....	7,495 30
14. Temiskaming .....	388,612 60
15. Farms .....	6,795 38
16. Creamery .....	7,011 97
17. Seed Grain .....	35,439 22
18. Cattle Purchase .....	405 45
19. Fire Protection (Timmins Townsite) .....	3,773 45
20. General Administration .....	23,424 09
	\$1,344,154 96
21. Returned Soldiers' and Sailors Settlement Act:	
General Account .....	\$110,715 11
Adjustment Account .....	91,750 13
	202,465 24
22. Settlers' Loan Account .....	64,317 82
	\$1,610,938 02

ARTHUR E. D. BRUCE.  
Secretary and Accountant.

## STATEMENT OF EXPENDITURE, YEAR ENDING 31ST OCTOBER, 1920.

*Making of Roads:*

Grigg, A., Deputy Minister, salary .....	\$400 00	
Whitson, J. F., the late, Commissioner, salary (8 mos.) .....	3,000 00	
Bruce, A. E. D., Secretary and Accountant, salary .....	3,450 00	
Beardall, F. G., Principal Clerk, salary.....	2,100 00	
Lawer, W. L., Senior Account Clerk, salary..	1,900 00	
Dower, A. R., Clerk, salary (11 mos.).....	1,374 99	
Dicker, C. L., Clerk, salary (10 mos.).....	1,166 66	
Sinton, Jas., Road Engineer, salary (10 mos.)	2,015 67	
Reid, A., Map Draughtsman, salary (9 mos.)	1,125 00	
Fleming, Miss E., Junior Clerk (2 mos.).....	154 78	
Carefoot, Miss O., Clerk-Stenographer (2 mos.)	147 75	
Caldwell, Miss G., Clerk-Stenographer (2 mos.)	126 64	
		\$16,961 49
Wages .....	702,816 38	
Contracts .....	137,340 76	
Supplies and equipment .....	433,610 86	
		1,273,768 00
		\$1,290,729 49

*Advancement of Settlement and Colonization:*

Wages .....	\$3,906 09	
Contracts .....	690 00	
Supplies, stock and equipment.....	2,199 29	
		6,795 38

*Creamery, New Liskeard:*

Wages .....	\$3,197 01	
Supplies, equipment, freight and expenses..	3,814 96	
		7,011 97

*Seed Grain:*

Wages .....	\$121 00	
Seed, freight and expenses .....	35,318 22	
		35,439 22

*Cattle Purchase Account:*

Feed, freight and expenses .....	405 45	
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*Fire Protection:*

Wages .....	3,773 45	
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*Returned Soldiers' and Sailors' Land Settlement Act:*

Wages .....	\$25,163 72	
Contracts .....	470 56	
Material, equipment, supplies, stock and ex- penses .....	85,080 83	
	\$110,715 11	
Adjustment Account .....	91,750 13	
		202,465 24
		\$1,546,620 20

*Settlers' Loan Department:*

Dane, F., Commissioner, salary.....	\$5,000 00	
Kennedy, W. K. P., Accountant, salary.....	2,500 00	
Crawford, G., Stenographer, salary .....	975 00	
		\$8,475 00
Net amount of loans issued .....	\$55,130 00	
Expenses .....	712 82	
		55,842 82
		64,317 82
		\$1,610,938 02

November 13th, 1920.

ARTHUR E. D. BRUCE,  
Secretary and Accountant.

## REVENUE ACCOUNT, 1920.

<i>The Making of Roads:</i>		
Sale of supplies, stock and equipment, rentals and refunds	\$6,743 16	
<i>Advancement of Settlement and Colonization:</i>		
Sale of produce, rentals .....	323 75	
<i>Creamery of New Liskeard:</i>		
Butter revenue, sale of buttermilk, coal and cans.....	5,571 14	
<i>Seed Grain:</i>		
Notes retired, cash sales and freight refunded.....	18,337 24	
<i>Cattle Purchase Account:</i>		
Notes retired and cash sales .....	2,096 11	
<i>Returned Soldiers' and Sailors' Land Settlement Act:</i>		
Sale of buildings, equipment, provisions, supplies, stock, etc., rental and school grant .....	59,729 98	
<i>Special Warrant Accounts:</i>		
Refunds .....	28,338 70	
		\$121,140 08
<i>Settlers' Loan Account:</i>		
Payments on principal, interest, etc. ....	78,621 00	
		\$199,761 08
Total revenue under all heads, 1920 account .....		

## RECORD OF CORRESPONDENCE.

*For Year Ended 31st October, 1920*

Letters received .....	7,745
Letters mailed .....	7,248
Circulars mailed .....	1,578
	8,826

ARTHUR E. D. BRUCE,  
Secretary and Accountant.



*Appendix No. 46.*

## REPORT OF THE BOARD OF ADJUSTMENT, APPOINTED APRIL 17TH, 1920.

TO EFFECT SETTLEMENTS WITH THE COLONISTS AT THE RETURNED  
SOLDIERS' AND SAILORS' COLONY AT KAPUSKASING.

In the Report of the Commission of Enquiry appointed on February 21st, 1920, certain recommendations were made for the adjustment of the affairs of the settlers at Kapuskasing. In order to give effect to these recommendations, the Government appointed a Board of Adjustment, consisting of Brigadier-General J. A. Gunn, Professor A. Leitch and A. S. Morgan, on April 17th, 1920. Later Dr. Albert H. Abbott was named as Secretary of this Board. This Board of Adjustment was empowered to effect settlements in the case of each settler, and for its guidance the following basis of adjustment was authorized by the Government.

REGULATIONS UNDER RETURNED SOLDIERS' AND SAILORS' LAND  
SETTLEMENT ACT, 1920.

1. The adjusting officers shall be the adjusting officers appointed under the Northern and North-Western Ontario Development Act, 1912, 2 Geo. V, Chap. 2, and such adjusting officers shall be authorized to appoint such officers, employees and servants as they may require, at such wages, remuneration or salary as they may deem expedient for the purpose of carrying out the provisions of the Returned Soldiers' and Sailors' Land Settlement Amendments Act, 1920.

2. The adjusting officers shall be authorized to hold such hearings and take such evidence on oath or otherwise as they may deem necessary, and to make such awards, settlements and grants as provided in paragraphs 11 (a) and 11 (b) of the said amendments of Act, at such places and at such times as they may determine. That subject to amendments by the adjusting officers as hereinafter provided, the basis upon which any award, settlement or grant shall be made shall be as follows:

(a) The houses and buildings erected upon the settlers' location shall be valued, and the settlers' building account with the Northern Development Branch shall be adjusted in accordance with such valuation.

(b) Each settler, who has not ceased to be a member of the Colony, shall be given the privilege of electing either to remain in the Colony or to leave it.

(c) In the event of a settler electing to leave the Colony, in accordance with the provisions of paragraph (b), the value of the obligation of the Department for the ten-acre clearing ready for the plough, either done or to be done, shall be fixed at \$1,000.00, and the settlers' general account with the said Branch shall be credited with that amount.

(d) In the event of any settler having any clearing ready for the plough beyond the Government ten acres, he shall be credited in addition to the amount mentioned in paragraph (c) at the rate of \$50.00 per acre for not more than ten acres, and the value of any additional partial clearance by the settler shall be fixed by the adjusting officers and credited to the settler.

(e) Each settler being indebted for animals purchased shall return the same to the Government and be credited with the purchase price, including any cash already paid by him on account thereof.

(f) Credit shall be given to the settler for all saw-logs, pulpwood, railway ties, or other timber cut by him but not delivered.

(g) Each settler shall be entitled to free transportation for himself, his family and effects, to any point in Ontario chosen by him.

(h) That from the aggregate of the value of the houses and other buildings, as ascertained in accordance with paragraph (a), and the said sum of \$1,000.00 under the provisions of paragraph (c), and any sums due to the settler under the provisions of paragraphs (d), (e) and (f), shall be deducted the indebtedness of the settler up to and including the date hereof, provided that such balance due to any settler shall be deemed to be not less than \$500.00, subject to the deduction of any indebtedness incurred after the date hereof. Any such balance shall be paid to him in monthly instalments of \$100.00; the first of such payments to be made on the date of the adjusting account hereinafter referred to, and such first payment to be subject to the deduction therefrom of the amount of the settler's indebtedness to the said Branch incurred after the date hereof.

(i) The Adjusting Officers may authorize the payment of the whole or any portion of any balance, as provided in paragraph (e), in a lump sum, either on the date of the adjusting account or at such time as they may deem advisable.

(j) In the event of a settler electing to remain in the Colony, in accordance with the provisions of paragraph (b), the settler shall have the privilege of receiving as a gift, a horse from amongst those at the Colony, and a half set of double harness, and the sum of \$200.00, payable quarterly in advance; the first of such payments to be made upon the date of the adjusting account. Priority of selection of horses to be determined by priority of application to enter the Colony.

(k) If any settler does not desire to accept a horse and harness, as provided in paragraph (j), he shall be given \$450.00 in lieu of the horse, harness and \$200.00 as provided in paragraph (j).

(l) Farms left vacant by those settlers who elect to leave the Colony at Kapuskasing shall be available for transfer to those at outlying points who elect to remain. The terms of adjustment shall be settled by the Adjusting Officers.

(m) Seed grain necessary for seeding each settler's available land during the spring of 1920 shall be supplied free, provided that such settler furnished to the Adjusting Officers a statement of the area of such available land before..... day of.....1920, and the acreage of each crop he intends to plant. The choice shall be confined to spring wheat, oats, barley, timothy and clover seed.

(n) The Adjusting Officers shall provide each settler at present at the Colony with a statement of his adjusting account. The form to be used for a settler who elects to leave the Colony shall be that attached hereto, marked "Form No. 1," and the form to be used for the settler who elects to remain shall be marked "Form No. 2," and such respective forms of account, when completed and executed by the Chairman of the Adjusting Officers on behalf of those officers, and by the settler, and in the case of a married settler by his wife, shall be conclusive as to the facts stated therein, and shall be sufficient authority for payment of any monies shown therein to be due to him or on his account.

(o) Notwithstanding any provisions in these regulations contained, the Adjusting Officers may alter, amend, or vary the terms of these regulations as they in their absolute discretion may deem expedient or advisable.

After studying the question for some days, the Chairman of the Board drew the attention of the Prime Minister to certain matters connected with the settlements, and received for the guidance of the Committee a letter as follows:

Toronto, April 24th, 1920.

"My dear General Gunn,—

"I am writing this letter as a general instruction from myself and the Government with regard to the settlement of the affairs of the settlers at Kapuskasing.

"You are already familiar with the terms of the basis of adjustment, and these must stand. Recognizing, however, the correctness of the statement made by the Commission of Enquiry on page 12 of the printed report, we have added a paragraph which gives the Board very full discretion in the application of the general principles laid down. The Commissioners' statement is: 'They are convinced that no solution of the difficulty can be proposed which will be equally fair to all parties,' and the paragraph which we have added to the Basis of Adjustment is as follows:

"Notwithstanding any provisions in these regulations contained, the adjusting officers may alter, amend or vary the terms in these regulations as they in their absolute discretion may deem expedient or advisable."

"In using the discretionary power given to the Board, I would suggest that two general principles be kept in mind: (1) We wish, in the treatment of all settlers, to err on the side of generosity rather than to strive to drive a hard bargain with them; (2) We wish that those who have been successful, and who elect to remain at Kapuskasing, should be treated rather more generously than those who elect to leave the Colony.

"We have been informed that the adjustment of the alleged overcharges in the cost of the houses could be simplified by giving the settler credit for what he has paid on his house and ignoring the balance of indebtedness which stands on the books against him in the 'House' account. We wish you to consider whether this would be a fair and simple solution of the difficulty.

"While the above will apply to by far the greater number of houses, we are informed that some houses have been built which have cost the settler up to twice as much as the standard house recommended by the Government. We feel that in erecting these more expensive houses, the settlers must assume responsibility for their judgment, and we suggest that you consider limiting the value of any house to say \$800.00, or at most \$1,000.00. This would mean that no matter how much the settler may have actually spent on his house, he would not be allowed more for it than the maximum set.

"In dealing with those who elect to remain at Kapuskasing, we feel that one consideration has been omitted from the Basis of Adjustment. When the settlers went to Kapuskasing, under the original plan, they were promised, (1) a free grant of 100 acres of land, (2) the clearing of ten acres at the expense of the Government, (3) a grant of \$150.00 toward the building of a house. In the Basis of Adjustment, no mention is made of the obligation of the Government to complete the clearing of the ten acres in cases in which that amount of land has not been cleared. We recognize our obligation in the case of those who elect to leave the colony by paying them \$100.00 an acre up to ten acres whether the land has been cleared or not, and we feel that the same consideration should be given to those who elect to remain, namely, in the event of less than ten acres having been cleared, we should allow such settlers at the rate of \$100.00 an acre for the balance of the ten acres. This would be in addition to the provision made in Section 4 of the Basis of Adjustment.

"Further, in Section 4 (c) it is provided that those who elect to remain may select the land of those who elect to leave, and 'in such cases generous terms of adjustment should be given by the Government.' I feel that no general rule can be made with regard to these terms, and therefore the Government leaves the making of these terms in each specific case wholly in the hands of the Board.

"The Government recognizes that a somewhat difficult task has been laid before you and your Board, and we wish you to feel that we have every confidence that the terms of settlement which you propose will be as equitable to each settler as they can be made. Complete fairness as between different settlers may be impossible to attain, but in that case we wish the settlers to feel that, while the settlement may be more generous to one than to another, it is intended that it should be generous to all. This applies particularly in the application of Section 3 (d). If the settler recognizes that what the Government wishes to do is to provide every man who leaves the colony with at least \$500 to start him in his new life, it will probably be seen that it is hardly right to speak of any settlement as being unfair.

"Special mention should also be made of one class of settlers, namely, those who have spent but a few months in Kapuskasing. They went there knowing the conditions. I think all of them were connected in some way by blood ties with persons who



were already there. The Government did not assume the same obligations in their case as with the original settlers. I would suggest, therefore, that instead of feeling bound to allow them \$1,000 for the clearing of ten acres, you should consider making a grant to them in no case to exceed \$500. This would be done not as a recognition of a Government obligation, but in order to help them to become established in any new occupation they may take up.

“Yours very truly,

“(Signed) E. C. DRURY.

“Brigadier-General J. A. Gunn,

“Chairman, Board of Adjustors for Kapuskasing Settlers,  
“Toronto, Ont.”

On April 24th the Board proceeded to Kapuskasing, and arrived there in the evening of the 25th. The settlers who had elected to leave the Colony were notified that the Board would meet them in the morning of April 26th. By Thursday evening, April 29th, the Board had effected settlements with sixty-one settlers who had decided to leave the Colony. In effecting these settlements the Board was assisted by Mr. Charles Lennox, architect, who visited the houses and other buildings and placed a valuation upon them, and by Mr. G. F. Summers, O.L.S., who measured the land cleared or partly cleared. A special train was ordered for these departing settlers and their effects, and on Saturday afternoon, May 1st, the train left Kapuskasing with practically all those who had decided not to remain. This train arrived in Toronto on Monday morning, and was met by representatives of the Citizens' Repatriation League, who saw that every settler remaining in Toronto had proper accommodation until permanent quarters could be secured, and those who were taking trains out of the city were assisted in every possible way. The Board of Adjustment is greatly indebted to the Citizens' Repatriation League, not only for this service, but also for helping the settlers in many ways to become established in their new homes. Within two weeks most of the settlers were either actually established in their new surroundings, or were well on the way to becoming established. Most of the men who left Kapuskasing have either purchased farms, or have gone to work on farms during the summer months, awaiting a more favourable opportunity for purchasing in the fall. A few of them have gone into their old lines of business, and a few have taken positions in manufacturing establishments. The Board felt that it should do everything in its power to assist these men to become settled in the kind of work in which they wished to engage, and any advice it could give, or any assistance it could render, which should be placed at their disposal; consequently, it arranged with the Citizens' Repatriation League to do for these settlers what it had been doing so efficiently during the past year for returned soldiers.

In the afternoon of April 26th the settlers who had elected to remain at Kapuskasing were met, and the general basis of settlement was discussed with them. However, on account of the fact that the basis suggested did not seem adequate, the Board decided to reach settlements with these men after it had had an opportunity of talking the matter over with members of the Government. A general basis of settlement was reached immediately following the return of the Board to Toronto, and the settlers were notified of the suggested settlement by letter on May 10th. On May 29th, the secretary proceeded to Kapuskasing, and was able, on Monday, May 31st, to effect settlements with all those remaining at the Colony.



## BASIS OF SETTLEMENT WITH THOSE WHO ELECTED TO LEAVE THE COLONY.

The general basis on which the Board proceeded in effecting settlements was as follows:

1. *Houses.* As the Government was taking over the property of the settlers leaving the Colony, it did not seem important to determine whether there had been an overcharge made when the houses were built for the settlers. Consequently, the Government grant of \$150 was allowed in each case where the settler had a house, and the settler was paid for any additions he had made to the house at his own expense. This avoided the necessity of entering into an intricate calculation which could only, in any case, have been roughly approximate to the actual facts. For this reason, in its basis of settlement, the Board made no reference to the value of the house, or to the house account on the Colony books, settlement being effected under two headings as follows:

1. Government grant allowed.
2. Labor and materials allowed.

2. *Buildings other than Houses.* A valuation was agreed upon between the settler and the Board, and this amount was allowed.

3. *Land.* According to the basis of adjustment, \$1,000 was allowed for the ten acres which the Government had agreed to clear for the settlers under the old scheme, and due allowance was made for any clearing which the settlers had done on their own account on the basis of a maximum of \$50 an acre for fully cleared land. Due allowance was also made for ploughing done, at the rate of \$10 an acre, and for the cost of seed and seeding done.

4. *Wood, Cut but not Delivered.* Allowance was made the settlers for wood cut but not delivered on the following basis:

Sawlogs, approximately .....	\$1 00 a log.
Pulpwood . . . . .	4 00 a cord.
Cordwood . . . . .	2 00 a cord.

Various other matters had to be adjusted, but the Board refused to attempt to make adjustment in all matters upon which accurate information was not available. This covered certain matters in dispute between the settlers and the Colony Superintendent from 1917 down. In particular, no allowance was made for work alleged to have been done in connection with contracts which had been let to the settlers, but which were later cancelled. However, it may be said that had the Board made allowance for all such work at the valuation placed upon it by the settler, a very moderate sum, not exceeding \$1,000, would have been involved.

From the total due to the settler, according to the above basis, was deducted the amount standing against him in the supply account, store account and horse and cow account on the books of the Colony, and from the net balance due the settler were deducted any advances which had been made to him through Rev. H. J. King—which had, of course, already been paid.

## BASIS OF SETTLEMENT WITH THOSE WHO ELECTED TO REMAIN AT KAPUSKASING.

After meeting the settlers who intended to remain at Kapuskasing, and ascertaining from their representations that they were not satisfied with the basis of adjustment proposed by the Commission of Enquiry (namely, a grant of \$450, or its equivalent), and as this agreed with the view already reached by the Adjusting Officers, we decided to recommend a new basis for the consideration of the Government. After going into the matter very thoroughly, and considering in particular what effect an allowance for the balance of the land uncleared, in the ten acres

which the Government had agreed to clear, would have, we decided to recommend a grant of \$1,000 to each settler. This was accepted by the Government, and accordingly the following principles were adopted as a basis of settlement:

1. A grant of \$1,000 was made to each settler, and particularly to those under the "old scheme." Those under the "new scheme" were treated according to the circumstances in each case.

2. All alleged overcharges on the house accounts were adjusted.

3. All the settler's indebtedness to the Colony was deducted from the amount allowed him.

4. Seed grain, etc., was provided free for sowing in the spring of 1920.

5. Certain of the farm machinery returned by the settlers who had left, or which was otherwise in the possession of the Colony, was given to the settlers.

6. In the case of the transfer of settlers to lots vacated by those leaving the Colony, we proceeded on the following basis:

The value of the land and buildings formerly held was compared with the value of the land and buildings on the lot desired, and approximately 25 per cent. of the difference was charged the settler for making the transfer. Several transfers were, however, made on even terms, and in the case of those on the "new scheme" a few transfers were made in lieu of the grant of \$1,000, or a large part of it.

7. Settlers were allowed to apply for the reservation of lots for their sons on terms to be settled by the Government.

Attached to this Report will be found statements showing the amount of seed grain, etc., allowed each settler, and the farm machinery given to the settlers. We also attach a copy of a letter sent to each settler remaining at Kapuskasing. This letter states the views of the settlers and the replies of the Adjusting Officers, and it thus is important in connection with the settlement.

We have also made out complete statements of the settlements effected, and these are attached hereto. These statements show the following:

Eighty-three settlers, on the Colony books on May 1st, have left Kapuskasing. In the case of six of these eighty-three, addresses were not known, or for other reasons no settlement was asked for by them.

Twenty settlers elected to remain at Kapuskasing.

One hundred and three settlers, that is, all on the list as eligible for settlement, are thus accounted for, and of these, settlements were effected with ninety-seven.

Of the six with whom settlements were not made, the following may be said:

WM. GAUTHIER was entered on Land Settlement Scheme on October 29th, 1919, under the new scheme. He left the Colony on November 16th, 1919. The last address known for him was Nushka, Ont. He was not regarded as meriting consideration.

BENJAMIN HALLIWELL was entered on Land Settlement Scheme on July 5th, 1918. He left the Colony on June 14th, 1919, on two weeks' sick leave, since when no information has been received of his whereabouts. As coming under the old scheme he might make a claim for the grant of \$1,000 for ten acres of land, but we should not have allowed him more than \$250 in any case, and believe he is actually not entitled to anything.

ARSENE HUARD entered on Land Settlement Scheme on September 5th, 1919, under the new scheme. He left the Colony on November 5th, 1919, expecting to return in the spring of 1920, but nothing has been heard of him, and his address is not known. He is not entitled to consideration in any case.

JOHN INNES entered on Land Settlement Scheme May 7th, 1918, and left the Colony on February 21st, 1919, requiring surgical treatment and mentally deranged. He is now in the Manitoba Provincial Hospital at Selkirk, Man. We have corresponded with the Superintendent and learn that he has no dependents, and that he is now under the care of the Department of Soldiers' Civil Re-establishment. He is apparently an incurable case. Had he been at the Colony he would have received at least a grant of \$150 on his house and \$1,000 on his land, but we believe no settlement is necessary.

T. T. LEWIS entered on Land Settlement Scheme on March 26th, 1918, and left the Colony for medical treatment on December 8th, 1919. He lived at Port Hope, but we have been unable to learn more of his whereabouts, and a letter addressed to the Mayor of Port Hope brought no reply. He apparently had no house at Kapuskasing, and therefore he could receive consideration only on the land grant. We believe he need not be further considered.

W. G. MOFFAT entered on Land Settlement Scheme September 25th, 1918, and left the Colony on May 4th, 1919, for three months' leave at Hamilton, Ont. The last address known for him there was 767 Barton Street. He had a house at Kapuskasing, which was valued at \$729.00, as against a cost, according to his house account, of \$542.31 plus \$150.00—\$692.31. We believe the house should be taken over and the house account cancelled, and that no attempt should be made to follow the matter further.

The settlements effected with those leaving the Colony show the following totals:

Valuation of houses .....	\$47,572 00	
House accounts cancelled .....		\$25,526 80
Allowed settlers on houses .....		12,868 00
Excess of valuation over accounts cancelled and amounts allowed .....		9,177 20
	\$47,572 00	\$47,572 00
Valuation of barns and outbuildings .....	\$15,708 00	
Allowed settlers on these .....		\$11,287 00
Excess of valuation over amount allowed .....		4,421 00
	\$15,708 00	\$15,708 00
Total amount allowed settlers .....	\$99,872 91	
Indebtedness .....		\$23,055 82
Amount advanced through Rev. H. J. King .....		1,248 99
Cash paid out .....		75,568 10
	\$99,872 91	\$99,872 91

The settlements effected with the twenty settlers remaining at Kapuskasing show the following totals:

Grants allowed .....	\$17,389 60	
Overcharges on houses allowed .....	650 00	
Credit on books .....	322 35	
Total allowed .....	\$18,361 95	
Amount charged for making transfers .....		\$1,025 00
Indebtedness .....		13,510 67
Total credits to settlers .....	\$4,886 59	
Total debits to settlers .....	1,060 31	
Amount of cash paid out .....	3,826 28	3,826 28
	\$18,361 95	\$18,361 95

These statements show the following cost to the Government of this whole settlement:

House Accounts Cancelled:		
Settlers leaving Colony .....	\$25,526 80	
Settlers remaining in Colony .....	5,263 07	
		\$30,789 87
Supply Accounts Cancelled:		
Settlers leaving Colony .....	\$10,799 21	
Settlers remaining in Colony .....	2,171 65	
		12,970 86
Store Accounts Cancelled:		
Settlers leaving Colony .....	\$11,302 86	
Settlers remaining in Colony .....	1,150 07	
		12,452 93
Other Accounts Cancelled:		
Settlers leaving Colony .....	\$953 75	
Settlers remaining in Colony .....	5,357 88	
Allowed through Rev. King .....	1,248 99	
		7,560 62
Cash Paid Out:		
To settlers leaving Colony .....	\$75,568 10	
To settlers remaining in Colony .....	3,826 28	
		79,394 38
		<u>\$143,168 66</u>

Against this the Government receives cleared land, on which no valuation can be made, and houses and out-buildings valued as follows:

Houses .....	\$47,572 00
Barns, etc. ....	15,708 00
	<u>\$63,280 00</u>

Deducting the value of the Buildings from the total cost of the settlement to the Government—transportation charges and other incidental expenses not considered—we get:

Total cost .....	\$143,168 66
Value of buildings .....	63,280 00
	<u>\$79,888 66</u>

or approximately the amount of cash paid out.

It is evident, therefore, that the Government has paid approximately \$80,000 to get back the land, cleared and uncleared, set aside for the Soldiers' and Sailors' Colony at Kapuskasing, with the exception of the twenty lots held by settlers still remaining in the Colony. At this cost, it has satisfied the hundred settlers that the Government wanted to deal fairly by them. Indeed, it might be said that most of the settlers would admit that the Government had treated them generously rather than merely fairly.

Respectfully submitted by,

(Sgd.) J. A. GUNN,

*Chairman.*

(Sgd.) ALBERT H. ABBOTT,

*Secretary.*



## COPY.

## FARM MACHINERY FOR YORKVILLE SETTLERS.

- 2 discs
- 2 sets harrows
- 2 walking ploughs
- 1 mower
- 1 seeder
- 1 roller
- 1 hay rake
- 2 one-horse cultivators
- 1 double wagon
- 1 single wagon
- 2 sets sleighs.

Approved by General Gunn.

(Sgd.) A. LEITCH.

In addition to the above the following articles were allowed to settlers in the final settlement:

- 1 set sleighs
- 1 single wagon

## FARM MACHINERY SOLD TO SETTLERS.

- 1 hillside plough
- 1 spring tooth harrow
- 1 disc harrow
- 1 single wagon
- 1 set sleighs
- 1 sawing machine
- 1 forge
- 1 anvil
- 1 grinder and bagger
- 2 pointers (boats).

## SEED FOR 1920

Name	Red Clover	Timothy	Oats	Barley	Peas	Wheat	Potatoes	
	lbs.	lbs.	bus.	bus.	bus.	bus.	bags	
Endicott.....	50	35	17	4	.....	2	1	
York.....	75	50	10	5	5	.....	1	
Ridley.....	90	60	10	5	5	.....	1	
Dertinger.....	35	25	.....	.....	.....	.....	1	
Foran.....	35	25	.....	.....	.....	.....	1	
Wing.....	110	70	14	5	7	.....	1	
Mairs.....	30	80	25	.....	.....	.....	1	
Call M. W.....	30	80	25	.....	.....	.....	1	
LeMarier.....	80	55	25	.....	3	.....	1	
Nash.....	50	35	.....	.....	.....	.....	1	
McMinn.....	75	50	10	5	5	.....	1	
Poolton.....	30	90	.....	.....	.....	.....	1	
Ryan.....	90	60	15	7	5	.....	1	
Sprague.....	50	75	30	.....	.....	.....	1	
Currie.....	50	50	5	.....	.....	.....	1	
Gough.....	40	20	.....	.....	.....	.....	1	1 Millet 1 Buckwheat
Total.....	920	860	186	31	30	2	16	
Cripps, Nephew of Wing, wants....	75	50	12	.....	5	.....	1	$\frac{1}{2}$ Millet 25 Rape
On hand.....	995	910 250	198	31	35 30	2 2	17	72 Millet 25 Rape
To Order.....	995	660	198	31	5	.....	17	1 bu. buck- wheat

COPY OF LETTER SENT TO SETTLERS ON MAY 10TH, RE SUGGESTED SETTLEMENT.

*Re the Adjustment to be made with the Settlers remaining at Kapuskasing.*

DEAR SIR,—The Board of Adjustment, in accordance with the promise made to the settlers remaining at Kapuskasing, has had a conference with the Government relative to the basis of settlement with these men, and we are now able to report the general basis upon which such scheme will be effected.

In the basis approved by the Government, in accordance with the report of the Commission of Investigation, the settlers electing to remain were to receive \$450 in cash or its equivalent value, and they were to have the privilege of transferring to lots left vacant by those leaving the Colony on terms which should be approved by the Government. It was also provided that seed for this spring's sowing should be supplied to these settlers free of charge.

Also, the settlers electing to remain were advised to form a school section as quickly as possible, and the Government was to pay the salary of the teachers, or teacher, for at least two years.

The settlers who wished to remain in the Colony did not think these terms as favourable as were the terms proposed to those electing to leave, and they presented to us certain suggestions, which were as follows:

1. That settlers whose ten-acre lots are not yet ready for the plough, be paid for completing stumping, or that the Government finish the job.
2. That all settlers remaining be placed on an equal footing.

3. That slashing and burning contracts to the value of \$500 be given to each settler for the year 1920, and the same for 1921.

4. That settlers remaining be given their patent, and have their building loan cancelled.

5. That settlers be allowed to reserve lots for their sons.

6. That so long as horses remain on the Colony farm, settlers continue to get the use of them under the same conditions as at present.

7. That settlers be permitted to buy food at cost from the Colony farm, so long as the farm is in operation.

8. That farm implements be provided for the use of settlers.

9. That as twelve children of school age now reside in Yorkville, a school be provided for them at once.

10. That settlers have preference in all work to be done at the Colony farm.

In answer to these suggestions we stated that they would have to be taken up with the Government, and we now are able to give answer to them as follows:

1. The suggestion regarding the allowance for uncleared land would be adopted in principle, no settler to receive more than one thousand dollars for ten acres.

2. This suggestion will automatically come into effect by the abandonment of the scheme, and broadly, in the settlement now to be made those on the new scheme will be treated practically the same as those on the old.

3. The Ontario Government will not provide work for settlers, but this is not necessary, as Mr. Ballantyne, of the Dominion Government Farm, assures us that he can give employment to all those remaining, in connection with the Dominion Government Farm.

4. We could not recommend, nor would the Government consider, the granting of patents on any basis more favourable than that already provided in the settlement scheme.

5. There is no objection whatever to settlers reserving lots for their sons, but such reservations will have to be made in the regular way, and not as a special favour to be granted by our Board. The only consideration which could be allowed would be that certain terms might be arranged with regard to the work to be done on such reserved lots, which would be of more advantage; both to the settler and his sons, than would be the case were their work divided. The beginning of the clearing on the sons' lot might be delayed for a reasonable time. This, however, will be a matter of individual adjustment.

6. So long as horses remain on the Colony Farm settlers may continue to get the use of them under the old conditions, but it is understood that this can be for a limited time only, as horses will not be retained on this farm by the Government after the final settlement has been made.

7. Settlers may buy feed at cost from the Colony Farm so long as the farm is in operation and has such feed to sell.

8. It has already been provided that settlers may receive farm implements free of charge when recommended by the Board, but no indiscriminate distribution of implements is to be made.

9. While no formal settlement with regard to the location of a school in Yorkville has been made, the Government is entirely favourable to such an arrangement as the Yorkville settlers suggested to the Board, viz., the Government would supply the materials and the settlers would themselves construct the school building free of charge. Until such time as this building is constructed a house suggested by the Yorkville settlers may be used as a school building, it being understood

that any arrangement regarding the school will not be effective until the beginning of the school term next fall.

10. As the Colony Farm is not to be operated by the Government there will be no opportunity of the Government carrying this suggestion into effect.

When we came to consider a basis of adjustment, we reached the conclusion that the most equitable to the settlers as a whole would be that a grant of one thousand dollars to each settler remaining in the Colony should be made, it being understood that this amount was to be applied in the first instance to the wiping out of any indebtedness up to April 30th which there might be on the books of the Colony against these settlers, and that so far as may be considered advisable, debts incurred, under the recommendation of the Board of Adjustment, since April 30th, should be covered also; this, however, to be done in such a way that it will not unduly embarrass the settler. That is to say, each individual case will have to be considered with regard to the payment of debts incurred since April 30th. With regard to the individual settlers, always bearing in mind that debts incurred since April 30th are not here included, this would mean the following adjustments:

The Board purposes to have the secretary proceed to Kapuskasing in the near future and have the necessary agreements signed by the settlers. In the meantime it is understood that the above statement covers the settlements which the Board is willing to make, with the exception of minor adjustments which may be necessary or advisable in individual cases.

The fact of any settler acting on statements contained in this letter before he actually signs the agreement with the Government is to be taken as clear evidence that he accepts the terms herein proposed, and that he understands that the acceptance of these terms releases the Government from any obligation, real or implied, which was undertaken with the settler under the Returned Soldiers' and Sailors' Land Settlement Act. It is, of course, understood that no money is to be paid out to complete this settlement until the papers are actually signed.

(HERE FOLLOWS THE SETTLEMENT IN THE CASE OF THE SETTLER ADDRESSED).

Part of the cash balance will be withheld until you proceed to build a house. This will be adjusted with you later.

Yours faithfully,

(Sgd.) ALBERT H. ABBOTT,

*Secretary, Board of Adjustment, Kapuskasing Colony.*



## SETTLEMENTS EFFECTED WITH SETTLERS REMAINING AT

Name; property held or transferred to; and reservations requested	Land cleared or partly cleared	Valuation of Buildings		Amount Allowed	
		House	Other bldgs.	Grant allowed	Overcharge on house a/c allowed
Call, M. W.— Lot 9, Con. 9, O'Brien...	8 ac. cleared, 2 ac. to stump and burn .....	\$ c. 590 00	\$ c. .....	\$ c. 1,000 00	\$ c. .....
Caron, Lean— Transferred to Lot 18, Con. 13, O'Brien.....	.....	.....	.....	.....	.....
Currie, A. S.— Lot 5, Con. 16, Owens...	10 ac. slashed only .....	.....	.....	1,000 00	.....
Darmet, C. H.— Transferred to Lot 19, Con. 14, O'Brien.....	.....	.....	.....	200 00	.....
Dertinger, Adam— Lot 22, Con. 8, O'Brien transferred to Lot 22, Con. 9, O'Brien. Asked reservation for son-in-law but no action .....	.....	582 00	15 00	1,000 00	.....
Endicott, E. E.— Lot 28 Cons. 10 and 11, O'Brien. Asked reservation for son Arthur, Lot 27, Cons. 10 & 11, O'Brien, to cost \$300.00.	5 ac. cleared, 5 ac. to stump and burn .....	not examined	.....	1,000 00	.....
Foran, David— Lot 24, Con. 8, O'Brien, transferred to Lots 25, & 26, Con. 10, O'Brien. Asked reservation for sister Bridget E. Foran, Lot 27, Cons. 9 & 10, O'Brien .....	.....	on old lot 150 00	147 00	1,000 00	.....
Gough, Wm.— Lot 20, Cons. 13 and 14, O'Brien. Asked reservations for son Walter, Lot 20, Con. 15, O'Brien, and for son Frank, Lot 19, Con. 15, O'Brien...	10 ac. ready for plough.....	1,384 00	756 00	1,075 12	.....
LeMarier, M.— Lot 18, Con. 8, O'Brien, Transferred to Lot 19, Con. 13, O'Brien.....	.....	on old lot 259 00	198 00	1,000 00	.....
Mairs, A. A.— Lot 8, Con. 11, O'Brien, transferred to Lot 9, Cons. 10 & 11, O'Brien.....	.....	on old lot 525 00	.....	1,000 00	.....
McMinn, W.— Lot 3, Con. 16, Owens. Asked reservations for son Wm. Gordon, Lot 1, Con. 17, Owens, and for son Harry, Lot 2, Con. 17, Owens. ....	3 ac. cleared, 7 ac. to stump and burn .....	680 00	.....	1,000 00	100 00

KAPUSKASING BY THE ADJUSTMENT BOARD, APRIL-JULY, 1920.

Cr. on books	Total Credits	Indebtedness							Net balance due to or from settler
		House a/c	Supply a/c	Store a/c	Horse or cow a/c	Indebtedness since April 30, 1920	Charge for transferring to other lot	Total indebtedness	
\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.
.....	1,000 00	351 03	104 57	155 55	.....	.....	.....	611 15	388 85Cr.
.....	1,000 00	.....	.....	83 83	.....	607 10	.....	690 93	309 07Cr.
.....	200 00	.....	.....	.....	.....	.....	.....	.....	200 00Cr.
.....	1,000 00	27 26	22 55	.....	.....	281 79	.....	331 60	668 40Cr.
.....	1,000 00	251 23	153 48	105 63	290 00	207 76	.....	1,008 10	8 10Dr.
33 35	1,033 35	.....	12 26	20 33	.....	255 31	125 00	412 90	620 45Cr.
289 00	1,364 12	500 00	641 39	222 73	.....	450 54	.....	1,814 66	450 54Dr.
.....	1,000 00	287 50	.....	.....	163 00	294 85	250 00	995 35	4 65Cr.
.....	1,000 00	132 75	.....	.....	.....	.....	200 00	332 75	667 25Cr.
.....	1,100 00	644 75	188 41	91 61	.....	204 84	.....	1,129 61	29 61Dr.

## SETTLEMENTS EFFECTED WITH SETTLERS REMAINING AT KAPUSKASING

Name; property held or transferred to; and reservations requested	Land cleared or partly cleared	Valuation of Buildings		Amount allowed	
		House	Other Buildings	Grant allowed	Overcharge on house a/c allowed
Nash, J.— Lot 3, Con. 15, Owens...	10 ac to stump and barn .....	\$ c. 630 00	\$ c. .....	\$ c. 1,000 90	\$ c. .....
Packer, W. M.— Lot 26, Con. 14, Owens. Transferred to Lot 24 Con. 11, O'Brien .....					
Poolton, T.— Lot 19, Con. 12, O'Brien.	10 ac. ready for plough.....	764 00	95 00	1,000 00	100 00
Ridley, J.— Lot 2, Con. 15, Owens. Transferred to Lot 28. Con. 15, O'Brien.....		on old lot 425 00		1,000 00	
Ryan, P.— Lot 29, Con. 15, O'Brien. Transferred to Lot 16. Con. 12, O'Brien.....		on old lot 360 00	75 00	1,000 00	
Sprague, W.— Lot 6, Con. 9, O'Brien. Transferred to Lots 7 and 8, Con. 10, O'Brien .....		on old lot 750 00	304 00	1,114 48	
Straiton, H.— Lots 25 and 26, Con. 11. O'Brien.....	Not examined...	not examined		1,000 00	
Wing, J.— Lot 1, Con. 15 & 16, Owens. Asked reservation for nephew Oliver Cripps. Lot 2, Con. 16, Owens. 5½ to cost 300.00 .....	5½ cleared, 1 to burn, 3½ to stump and burn	805 00	338 00	1,000 00	250 00
York, W. H.— Lot 1, Con. 14, Owens...	3 cleared, 7 to stump and burn	693 00	305 00	1,000 00	200 00
				17,389 60	650 00

## Summary—

Total amount allowed settlers.....	\$13,331 95	
Total indebtedness .....		\$14,535 67
Total Credit balances .....	\$4,833 59	
Total Debit balances .....	1,060 51	
Net Balance paid out. ....		3,826 28
	\$18,361 95	\$18,361 95

Cr. on books	Total Credits	Indebtedness							Net balance due to or from settler
		House a/c	Supply a/c	Store a/c	Horse or cow a/c	Indebtedness since April 30, 1920	Charge for transferring to other lot	Total indebtedness	
\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.
.....	1,000 00	562 78	6 95	35 31	.....	36 52	.....	641 56	358 44Cr.
.....									
.....	1,100 00	461 61	.....	.....	115 00	379 56	.....	956 17	143 83Cr.
.....	1,000 00	.....	46 00	.....	.....	30 98	250 00	326 98	673 02Cr.
.....	1,000 00	195 44	34 52	.....	.....	642 10	200 00	1,072 06	72 06Dr.
.....	1,114 48	457 29	524 63	107 56	25 00	500 00	.....	1,614 48	500 00Dr.
.....	1,000 00	421 29	.....	.....	.....	47 43	.....	468 72	531 28Cr.
.....	1,250 00	504 68	213 84	221 11	.....	228 98	.....	1,168 61	81 39Cr.
.....	1,200 00	465 46	223 05	106 41	.....	165 12	.....	960 04	239 96Cr.
322 35	18,361 95	5,263 07	2,171 65	1,150 07	593 00	4,332 88	1,025 00	14,535 67	4,886 59Cr.
									Less debit balances.....1,060 31Dr.
									Net balance paid out.... 3,826 28Cr.







## FINANCIAL REPORT ON SETTLEMENTS EFFECTED WITH THOSE LEAVING

Name and Property.	Re Buildings			Adjustments Allowed				
	Valuation on house	Valuation on other build-ings	House account cancelled by taking house	On House	On other buildings	On 10 acres land	On other land cleared	On horse and cow account
	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.
Harriott, David, Lots 14 & 15, Con. 11, O'Brien	764 00	305 00	651 37	200 00	300 00	1,000 00	450 00	.....
Harrow, G. W., Lot 18, Con. 12, O'Brien ...	754 00	385 00	377 19	250 00	150 00	1,000 00	50 00	.....
Hibbard, Thos., Lot 24, Con. 10, O'Brien ...	610 00	414 00	437 17	150 00	350 00	1,000 00	75 00	.....
Hirst, Wm., Lot 6, Con. 10, O'Brien .....	850 00	620 00	780 67	250 00	400 00	1,090 00	225 00	47 25
Huard, Arsene .....	.....	.....	.....	.....	.....	.....	.....	.....
Hudson, I. F., Lot 2, Con. 16, Owens .....	619 00	155 00	575 11	150 00	50 00	1,000 00	120 00	.....
Ilott, Harry, Lot 1, Con. 13, Owens .....	.....	.....	.....	.....	.....	.....	.....	.....
Ilott, Jos., Lot 1, Con. 12, Owens .....	.....	.....	.....	.....	.....	.....	.....	.....
Innes, John, Lot 5, Con. 10, O'Brien ....	475 00	.....	495 18	.....	.....	.....	.....	.....
Joyce, Norris, Lot 24, Con. 18, Owens .....	945 00	313 00	.....	350 00	250 00	1,000 00	.....	80 00
Kelly, J. J., Lot 19, Con. 14, O'Brien .....	400 00	100 00	.....	150 00	100 00	1,000 00	.....	.....
Kelly, J. W., Lot 26, Con. 9, O'Brien .....	825 00	277 00	308 10	250 00	200 00	1,000 00	45 00	.....
Kirkham, W. J., Lot 20, Con. 15, O'Brien ....	1,080 00	187 00	299 21	350 00	150 00	1,000 00	70 00	.....
Lewis, T. T. ....	.....	.....	.....	.....	.....	.....	.....	.....
Lowe, D. A., Lot 25, Con. 18, Owens .....	840 00	90 00	.....	250 00	100 00	1,000 00	.....	.....
Makowsky, H. E., Lot 16, Con. 11, O'Brien.	290 00	.....	.....	.....	.....	.....	.....	.....
Maltby, R., Lot 22, Con. 9, O'Brien .....	994 00	425 00	670 00	250 00	350 00	1,000 00	.....	.....
Meaden, W. F., Lot 25, Con. 15, Owens .....	540 00	97 00	.....	150 00	350 00	1,000 00	.....	.....
Moffat, W. G., Lot 19, Con. 15, O'Brien .....	729 00	.....	542 31	.....	.....	.....	.....	.....
Morgan, A. S., Lot 20, Con. 11, O'Brien ....	1,067 00	120 00	659 24	250 00	150 00	1,000 00	.....	.....
Musklow, W. F., Lot 5, Con. 11, O'Brien .....	.....	.....	.....	.....	.....	.....	.....	.....
Magrath, Thos., Lot 13, Con. 16, O'Brien ....	850 00	165 00	518 25	250 00	150 00	1,000 00	50 00	.....
McKinnon, I. C., Lot 15, Con. 12, O'Brien ....	1,152 00	116 00	556 33	250 00	75 00	1,000 00	.....	.....
McKinnon, W. N., Lot 15, Con. 13, O'Brien.	288 00	100 00	556 78	150 00	100 00	1,000 00	.....	.....
Nichols, D. C., Lot 21, Con. 11, O'Brien .....	.....	.....	.....	.....	.....	.....	.....	.....
Nichols, D. S., Lot 20, Con. 10, O'Brien ....	625 00	334 00	473 07	300 00	250 00	1,000 00	.....	.....
Nichols, G. H., Lot 20, Con. 9, O'Brien .....	.....	.....	.....	.....	.....	.....	.....	.....
Nypack, Herman, Lots 28 & 29, Con. 18, Owens .....	.....	.....	.....	.....	.....	.....	.....	.....
Otto, C. A., Lots 7 & 8, Con. 10, O'Brien ....	845 00	945 00	668 27	150 00	700 00	1,000 00	250 00	.....

## KAPUSKASING COLONY BY ADJUSTING OFFICERS, APRIL-JULY, 1920.—Con.

Adjustments Allowed					Indebtedness				Summary of Settlement		
On wood cut	On ploughing done	On seeding done	On sundry items	Total allowed settler	Supply account	Store account	Horse and cow account	Total indebtedness	Net balance due settler	Less advance made through Rev. H. J. King	Cash paid out
\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.
79 00	110 00	.....	.....	2,139 00	520 61	520 68	.....	1,041 29	1,097 71	50 00	1,047 71
15 00	.....	.....	.....	1,465 00	144 52	253 63	25 00	423 15	1,041 85	30 00	1,011 85
.....	.....	16 00	187 09	1,778 09	292 23	584 90	.....	877 13	900 96	49 51	851 45
.....	.....	5 00	.....	1,927 25	684 93	334 61	22 50	1,042 04	885 21	50 00	835 21
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	1,320 00	190 97	180 31	.....	371 28	948 72	.....	948 72
.....	.....	.....	529 89	529 89	.....	29 89	.....	29 89	500 00	.....	500 00
.....	.....	.....	300 00	300 00	.....	.....	.....	.....	300 00	.....	300 00
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	210 00	1,890 00	204 09	250 45	.....	454 54	1,435 46	.....	1,435 46
.....	.....	.....	.....	1,250 00	3 18	5 57	.....	8 75	1,241 25	.....	1,241 25
.....	30 00	.....	362 84	1,887 84	335 36	485 32	25 00	845 68	1,042 16	53 24	988 32
.....	.....	.....	.....	1,570 00	.....	.....	.....	.....	1,570 00	.....	1,570 00
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	22 00	75 00	1,447 00	.....	151 76	.....	151 76	1,295 24	.....	1,295 24
.....	.....	.....	554 26	554 26	15 22	39 04	.....	54 26	500 00	14 90	485 10
.....	.....	.....	.....	1,600 00	.....	.....	.....	.....	1,600 00	.....	1,600 00
.....	.....	.....	.....	1,500 00	.....	.....	.....	.....	1,500 00	.....	1,500 00
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	40 00	.....	.....	1,440 00	87 97	186 07	.....	274 04	1,165 96	39 00	1,126 96
.....	.....	.....	200 00	200 00	.....	.....	.....	.....	200 00	.....	200 00
40 00	.....	.....	.....	1,490 00	96 24	247 70	.....	343 94	1,146 06	30 00	1,116 06
.....	.....	.....	.....	1,325 00	.....	111 20	.....	111 20	1,213 80	.....	1,213 80
.....	.....	.....	.....	1,250 00	3 55	.....	.....	3 55	1,246 45	.....	1,246 45
.....	.....	.....	500 00	500 00	.....	.....	.....	.....	500 00	.....	500 00
.....	30 00	.....	.....	1,580 00	93 26	109 89	25 00	228 15	1,351 85	.....	1,351 85
.....	.....	.....	500 00	500 00	.....	.....	.....	.....	500 00	.....	500 00
.....	.....	.....	150 00	150 00	.....	.....	.....	.....	150 00	.....	150 00
.....	.....	.....	.....	2,100 00	982 63	578 05	240 00	1,800 68	299 32	36 79	262 53



## FINANCIAL REPORT ON SETTLEMENTS EFFECTED WITH THOSE LEAVING

Name and Property.	Re Buildings			Adjustments Allowed				
	Valuation on house	Valuation on other buildings	House account canceled by taking house	On House	On other buildings	On 10 acres land	On other land cleared	On horse and cow account
	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.
Precious, D., Lot 7, Con. 9, O'Brien ....	810 00	664 00	668 49	250 00	400 00	1,000 00	.....	25 00
Precious, W. W., Lot 7, Con. 8, O'Brien ....	.....	.....	.....	.....	.....	.....	.....	.....
Preston, Robt., Lots 23 & 24, Con. 17, Owens	887 00	30 00	.....	150 00	100 00	1,000 00	.....	.....
Pryce, Jas., Lot 6, Con. 11, O'Brien .....	780 00	200 00	714 44	150 00	200 00	1,000 00	85 00	54 75
Raynsford, John, Lot 26, Con. 8, O'Brien...	560 00	60 00	388 90	150 00	50 00	1,000 00	.....	.....
Reid, W. C., Lot 22, Con. 10, O'Brien ...	658 00	380 00	528 52	150 00	250 00	1,000 00	.....	.....
Roberts, Jos., Lot 25, Con. 15, Owens ....	150 00	.....	.....	.....	.....	1,000 00	.....	.....
Robinson, D. L., Lot 14, Con. 13, O'Brien ....	.....	.....	.....	75 00	.....	1,000 00	75 00	.....
Rodger, Robt., Lot 19, Con. 13, O'Brien ....	1,390 00	300 00	480 87	400 00	300 00	1,000 00	90 00	.....
Salava, J. O., Lot 29, Con. 1, Williamson...	.....	.....	.....	.....	.....	.....	.....	.....
Scarborough, E. T., Lot 24, Con. 16, Owens..	366 00	345 00	.....	.....	.....	.....	.....	.....
Scarborough, R., Lot 27, Cons. 10 & 11, O'Brien	900 00	150 00	637 70	250 00	75 00	1,000 00	60 00	.....
Selley, W. H., Lot 19, Con. 10, O'Brien ....	864 00	72 00	897 24	150 00	72 00	1,000 00	120 00	.....
Smith, Fred, Lot 18, Con. 10, O'Brien ...	772 00	300 00	718 56	150 00	100 00	1,000 00	100 00	.....
Smith, W. R., Lots 10 & 11, Con. 10, O'Brien..	946 00	210 00	482 18	300 00	180 00	1,000 00	50 00	.....
Souch, Wm., Lot 28, Con. 15, O'Brien ....	730 00	.....	344 29	150 00	75 00	1,000 00	.....	.....
Stacey, John, Lot 17, Con. 10, O'Brien ....	.....	.....	.....	.....	.....	.....	.....	.....
Taylor, Ernest, Lot 12, Con. 11, O'Brien ....	750 00	75 00	618 47	150 00	75 00	1,000 00	30 00	.....
Thornton, I. B., Lots 25 & 26, Con. 10, O'Brien	900 00	70 00	582 85	250 00	50 00	1,000 00	100 00	.....
Vice, J. H., Lot 22, Con. 8, O'Brien ....	600 00	95 00	423 34	150 00	75 00	1,000 00	.....	.....
Waterhouse, C. C., Lot 14, Con. 12, O'Brien..	1,652 00	180 00	563 08	200 00	450 00	1,000 00	332 00	.....
Whelan, W. G., Lot 25, Con. 1, Williamson...	756 00	105 00	.....	250 00	100 00	1,000 00	.....	.....
Wilkinson, R. W., Lot 17, Con. 11, O'Brien..	.....	.....	.....	.....	.....	.....	.....	.....
Wilkinson, Wm., Lot 18, Con. 11, O'Brien ...	825 00	270 00	550 00	150 00	145 00	1,000 00	45 00	130 00
Wilson, C. H., Lot 9, Cons. 10 & 11, O'Brien	620 00	843 00	569 20	150 00	600 00	1,000 00	360 00	.....
Titus, Mrs. Violet, Lot 13, Con. 11, O'Brien..	832 00	770 00	.....	150 00	200 00	1,000 00	62 00	.....
Totals .....	47,572 00	15,708 00	25,526 80	12,868 00	11,287 00	59,750 00	4,483 00	407 50

KAPUSKASING COLONY BY ADJUSTING OFFICERS, APRIL-JULY, 1920.—Concluded.

Adjustments Allowed					Indebtedness				Summary of Settlement		
On wood cut	On ploughing done	On seeding done	On sundry items	Total allowed settler	Supply account	Store account	Horse and cow account	Total indebtedness	Net balance due settler	Less advance made through Rev. H. J. King	Cash paid out
\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.
.....	.....	.....	.....	1,675 00	193 29	161 32	25 00	379 61	1,295 39	30 00	1,265 39
.....	.....	.....	200 00	200 00	.....	.....	.....	.....	200 00	.....	200 00
.....	.....	.....	125 00	1,375 00	145 89	72 36	.....	218 25	1,156 75	31 44	1,125 31
.....	10 00	.....	.....	1,499 75	232 23	383 06	.....	615 29	884 46	25 00	859 46
12 00	.....	.....	.....	1,212 00	.....	.....	.....	.....	1,212 00	.....	1,212 00
12 00	20 00	14 00	.....	1,446 00	264 48	346 76	.....	611 24	834 76	.....	834 76
.....	.....	.....	.....	1,000 00	.....	.....	.....	.....	1,000 00	.....	1,000 00
.....	.....	.....	.....	1,150 00	18 51	46 15	.....	64 66	1,085 34	.....	1,085 34
.....	.....	.....	213 34	2,003 34	247 05	372 03	.....	619 08	1,384 26	45 25	1,339 01
.....	.....	.....	200 00	200 00	.....	.....	.....	.....	200 00	.....	200 00
.....	.....	.....	540 21	540 21	.....	40 21	.....	40 21	500 00	.....	500 00
27 50	.....	.....	37 66	1,450 16	137 52	109 26	.....	246 78	1,203 38	.....	1,203 38
.....	100 00	.....	.....	1,442 00	126 59	294 62	.....	421 21	1,020 79	50 00	970 79
.....	.....	.....	.....	1,350 00	151 30	278 02	.....	429 32	920 68	35 00	885 68
10 00	.....	56 00	.....	1,596 00	206 22	99 36	.....	305 58	1,290 42	43 91	1,246 51
.....	70 00	25 00	.....	1,320 00	.....	.....	.....	.....	1,320 00	.....	1,320 00
.....	.....	.....	300 00	300 00	.....	.....	.....	.....	300 00	.....	300 00
.....	75 00	.....	.....	1,330 00	44 07	112 86	.....	156 93	1,173 07	30 00	1,143 07
.....	.....	.....	.....	1,400 00	130 62	.....	.....	130 62	1,269 38	.....	1,269 38
18 00	.....	.....	61 50	1,304 50	32 66	193 09	.....	225 75	1,078 75	.....	1,078 75
.....	40 00	.....	59 67	2,081 67	424 17	651 62	.....	1,675 79	1,005 88	75 00	930 88
.....	.....	.....	234 00	1,584 00	3 31	216 28	.....	219 59	1,364 41	39 18	1,325 23
.....	.....	.....	200 00	200 00	.....	.....	.....	.....	200 00	.....	200 00
30 00	.....	.....	83 79	1,583 79	226 82	134 94	.....	361 76	1,222 03	.....	1,222 03
10 00	.....	.....	.....	2,120 00	277 15	.....	25 00	302 15	1,817 85	.....	1,817 85
.....	60 00	.....	.....	1,472 00	.....	.....	.....	.....	1,472 00	.....	1,472 00
754 50	1,005 00	304 00	9,013 41	99,872 41	10,799 21	11,302 86	953 75	23,055 82	76,816 59	1,248 99	75,567 60

## SUMMARY.

1. Valuation on Houses .....	\$47,572 00	
Amount of house accounts cancelled .....		\$25,526 80
Amount allowed settlers .....		12,868 00
Excess of valuation over house accounts and amounts allowed .....		9,177 20
	<hr/>	<hr/>
	\$47,572 00	\$47,572 00
2. Valuation of Barns and Outbuildings .....	\$15,708 00	
Amount allowed settlers on these .....		\$11,287 00
Excess of valuation over amount allowed .....		4,421 00
	<hr/>	<hr/>
	\$15,708 00	\$15,708 00
3. Total Amount Allowed Settlers .....	\$99,872 41	
Total indebtedness cancelled .....		\$23,055 82
Net balance due settlers .....		76,816 59
	<hr/>	<hr/>
	\$99,872 41	\$99,872 41
4. Net balance due settlers .....	\$76,816 59	
Amount paid settlers through Rev. H. J. King .....		\$1,248 99
Cash paid out .....		75,567 60
	<hr/>	<hr/>
	\$76,816 59	\$76,816 59

Respectfully submitted on behalf of the Adjusting Officers,

J. A. GUNN,  
*Chairman.*

ALBERT H. ABBOTT,  
*Secretary.*

SUMMARY OF EXPENDITURE IN ADJUSTING CLAIMS OF SOLDIER SETTLERS  
AT KAPUSKASING COLONY.

EFFECTED BY THE ADJUSTING OFFICERS, UNDER THE CHAIRMANSHIP OF  
BRIGADIER-GENERAL J. A. GUNN.

Amounts awarded to settlers leaving the Colony .....	\$76,816 59	
Amounts awarded to settlers remaining at the Colony .....	4,886 59	
	<hr/>	\$81,703 18
Freight on household goods of settlers leaving the Colony...	\$1,282 26	
Railway fares of settlers leaving the Colony .....	6,239 46	
	<hr/>	7,521 72
Seeds provided for settlers remaining at the Colony .....		1,551 30
Expenses of adjusting officers and incidental expenses .....		973 93
	<hr/>	<hr/>
Total expenditure .....		\$91,750 13

ARTHUR E. D. BRUCE,  
*Secretary and Accountant.*

*Appendix No. 47.*

## SETTLERS' LOAN COMMISSIONER.

TORONTO, December 15th, 1920.

*To the Honourable the Minister of Lands and Forests, Ontario.*

SIR,—I beg to herewith submit a report of the operations conducted by this Department under the Northern and North-western Ontario Development Act, Amending Acts 1916 and 1918.

Up to October 31st, 1920, a total of 2,227 applications for loans were received, asking for an amount of \$874,760.00, an average of \$384.61 per application. Careful consideration was given to each individual request, and loans advanced on the basis of security offered in the way of improved land, where it was clearly shown the money could be used to good advantage for the improvement of settlement duties.

A total of 1,556 loans have been made to settlers, amounting to \$490,836.00, an average of \$315.44, and in addition a loan of \$12,000.00 has been advanced to the Sudbury Co-operative Creamery Co., Ltd., and also a loan of \$8,000.00 to the Kenora Dairy Co-operative Association.

The repayment of loans has been very satisfactory, as is evidenced by the fact that over 90 per cent. of the interest payments are up-to-date, and payments of principal equal over 97 per cent. of the amount due, this being partly due to the fact that a number of loans have been paid in advance.

I beg to direct your attention to the attached memorandum giving details of operation carried on, and it is a pleasure to be able to state that settlers who have received loans through this Department have expressed their appreciation of the help the loan has been, by enabling them to stay on their own lots, and carry on the work of clearing land.

Yours very truly,

F. DANE,

*Settlers' Loan Commissioner.*



*Memorandum of Settlers' Loans to October 31st, 1920.**Applications.*

Total number of applications received .....	2,227
Total amount applied for .....	\$874,760 00
Average per application .....	384 61
Amount applied for under approved applications .....	636,040 00

*Loans.*

Number of loans issued .....	1,558
Equal to 70% of applications.	
Amount granted .....	510,836 00
Equal to 58% of total amount applied for, and	
Equal to 80% of total amount applied for under	
approved applications.	315 44
Average loan .....	238,678
Total acreage covered by liens .....	32,663
Acreage improved land—equal to 13.2% of total acreage .....	2 14
Average loan per acre on total acreage .....	15 63
Average loan per acre on acreage improved land .....	

NOTE.—Figures, except averages, include application for, and loan of \$12,000.00 to Sudbury Co-operative Creamery Co., Ltd., and \$8,000.00 to the Kenora Dairy Co-operative Association, Ltd.

*Repayments.*

Accrued interest due .....	\$71,789 03	
Accrued interest received .....	65,305 30	or 90.96%
Payments on principal due .....	130,197 69	
Payments on principal received .....	126,787 33	or 97.38%
Total payments due .....	201,986 72	
Total payments received .....	192,092 63	or 95.10%

*Details of Loans Issued and Outstanding.*

District	No. of Loans	Amount	Unpaid Principal and Accrued Interest
Algoma.....	33	\$10,105 00	\$8,976 26
Kenora .....	135	47,895 00	38,920 54
Nipissing.....	68	24,800 00	19,044 17
Rainy River .....	129	41,600 00	31,442 01
Sudbury .....	32	22,975 00	21,003 70
Temiskaming .....	691	213,740 00	152,866 39
Thunder Bay .....	470	149,721 00	118,279 33
Totals.....	1,558	\$510,836 00	\$390,532 40

*Appendix No. 48.*

## REPORT OF FORESTRY BRANCH, 1920.

SIR,—The report of the work of this Branch for the year ending 31st October, 1920, is given under the sections of Forest Protection, Forest Investigation, Reforestation, and Forest Pathology.

## I. FOREST PROTECTION.

(1) *Personnel.*

The average daily force was: During April, 19; May, 406; June, 910; July, 962; August, 916; September, 600; October, 28. The total number of persons employed for at least a part of the season was 1,209; of these 240 resigned after a time, and 70 were dismissed for various reasons. Such a turnover, of 25 per cent. in the field force in the short space of five months is detrimental to the organization.

(2) *Expenditure.*

The expenditure for the fiscal year was \$506,107.71, classified as below, with the figures for the preceding years given for comparison. As an offset to this, protection accounts accruing for the year totalled approximately \$240,000.00.

## CLASSIFICATION OF EXPENDITURE

Item	1920	1919	1918
Pay roll .....	\$398,919 61	\$405,212 30	\$416,500 00*
Equipment .....	22,287 83	22,899 02	28,350 00
Expendable property .....	16,589 99	13,903 06	10,700 00
Travel (inspection) .....	17,495 93	15,826 37	13,440 00
Improvement work .....	1,591 01	4,765 35	4,280 00
Extra fire fighting .....	41,491 24	58,863 92	1,445 00
Express, postage, etc. ....	5,401 02	5,646 47	5,365 00
Miscellany .....	2,331 08	5,955 02	6,054 78
Total .....	\$506,107 71	\$528,071 51	\$486,134 78

\* Figures rounded off.

(3) *Fires.*

The outstanding features of forest administration in this Province as in all Eastern Canada is the inability to control the losses from forest fires. The undertaking is so large and its bearing so important that the other phases of administrative work are comparatively minor matters. The successful working out of this problem will result in timber growth on the bulk of our cut-over lands. It is true that this growth will often not be as satisfactory as we would like, but any sort of a crop is better than barrens.

Up to the present a factor contributing largely to the difficulty of handling the situation has been the impermanency of the organization. This matter was referred to at length in last year's report. Since the close of this fire season

forest protection and the administration of timber matters have been consolidated under this Branch. This opens the way for organization of the field force on a permanent basis, with all the ensuing benefits.

But the crux of the problem of forest fire control is the slash and debris resulting from present logging methods. Year after year new large areas of slash are allowed to be created; these are most inflammable, and make extremely hot fires which are largely uncontrollable till they reach green timber. Each succeeding season large sums of money are spent to handle this situation of our own making. Until brush disposal is systematically undertaken as an integral part of the operation of logging our forests will burn.

### CLASSIFICATION OF FOREST FIRES

By month					By Origin					
Month	1920	1919	1918	1917	Origin	1920	1919	1918	1917	
	No.	No.	No.	No.		No.	%	%	%	%
May.....	422	362	294	449	Settlers.....	142	11.0	7.7	8.1	8.2
June.....	309	414	273	320	Campers.....	151	11.7	9.2	9.7	13.9
July.....	142	613	124	158	Railways.....	307	23.9	37.0	46.5	49.5
August.....	300	377	268	117	Lightning.....	14	1.1	3.0	3.8	2.9
September....	114	14	6	66	Logging op'ns..	59	4.6	2.5	4.1	4.1
					Miscellaneous..	93	7.2	4.3	4.6	3.6
					Unknown.....	521	40.5	36.3	23.2	17.8
Totals.....	1,287	1,780	965	1,110		1,287	100.0	100.0	100.0	100.0

### BY SIZE

Size	1920		1919	1918	1917
	No.	%	%	%	%
1/4 ac. and under.....	298	23.2	30.5	40.5	36.3
Over 1/4 to 5 ac.....	379	29.4	27.7	33.7	19.5
Over 5 to 10 ac.....	104	8.1	6.1	6.0	4.8
Over 10 to 100 ac.....	220	17.1	16.5	13.6	9.5
Over 100 to 500 ac.....	153	12.0	8.7	5.1	4.7
Over 500 ac.....				1.1	25.2
500 to 1,000.....	64	5.0	3.3		
1,000 to 10,000.....	63	4.9	5.9		
Over 10,000.....	4	0.3	1.3		
	1,287	100.0	100.0	100.0	100.0

In the spring of 1920 the snow disappeared very early and rapidly. Very unusual weather conditions then set in and for practically two months no rain fell. During this period nearly sixty per cent. of the season's fires were recorded.

*Railway Fires.*—Defective locomotives and careless railway employees were responsible for 23.9 per cent. of the total number of fires from all causes. As shown in the above table the percentage of fires of railway origin has steadily decreased year by year till now it is one-half of what it was in 1917. This is due largely to the increasingly special attention given to the locomotive inspection end of our work.

The fires of railway origin were distributed as follows:

	Per cent.
Canadian National Railway .....	32.3
(exclusive of northern line)	
Canadian Pacific Railway .....	27.9
Canadian National Railway .....	16.4
(northern transcontinental line only)	
Timiskaming and Northern Ontario .....	9.9
Algoma Eastern .....	5.0
Algoma Central .....	4.4
Grand Trunk .....	4.1
	100.00

*Other Causes.*—Neglected camp fires caused 151 fires, half as many as the railways, or 11.7 per cent. of the total season's fires. The indifference and carelessness exhibited by tourists, picnickers, berrypickers, and other users of the woods, as regards this matter is incredible except by those knowing the facts. This attitude will continue until the Act provides a jail sentence for flagrant instances.

Settlers were responsible for 11.0 per cent. of all fires; nearly one-third of these were permit fires which were allowed to get beyond control.

The percentage of all fires due to carelessness of those engaged in lumbering operations this year was 4.6; this is the highest within the last four years. More co-operation on the part of this industry might be expected during the peaks of hazard.

*Area Burned.*—In all, 358,851 acres were reported burned over in 1920 as compared with 922,161 acres in 1919; 30,172 acres in 1918; and 384,164 acres in 1917. This acreage was classified thus:

#### CLASSIFICATION OF BURNED-OVER AREA

Forest Condition	1920		1919	1918	1917
	Acres	%	%	%	%
Timber land .....	52,858	14.7	26.8	15.8	19.1
Cut-over land (some timber left).....	139,438	38.8	27.3	37.0	39.2
Young growth (below six inches) .....	95,730	26.7	25.3	23.5	19.5
Barren and grass land.....	70,825	19.8	20.6	23.7	22.2
	358,851	100.0	100.0	100.0	100.0

As shown in the table, the area of timber land burned over, fell this season to 14.7 per cent. of the whole, the lowest figure yet. As in previous years, the area lumbered over formed the setting for the bulk of the fires, being 65.5 per cent. of the total burned acreage. During the past four seasons nearly 1,000,000 acres (equal to 40 townships) of this type of land has been burned over (60 per cent. of the total area) and the existing young trees mostly killed. When it is considered that this high percentage is because of its covering of logging slash, and that this is the land upon which we are depending for the next crop of timber to furnish revenue, one is seized of the importance of dealing with the problem of slash disposal.



## CLASSIFICATION OF FOREST AREAS BURNED OVER, 1920

Ranger District	Number of fires	Timber land, mainly coniferous, i.e., soft-wood	Timber land, mainly hardwood	Cut-over-land, some softwood left	Cut-over-land, some hardwood left	Young growth, mainly coniferous	Young growth, mainly hardwood	Barren land	Grass land	Totals (acres)
<b>I. Western Inspectorate—</b>										
1 Kenora District.....	85	2,209	55	1,725	315	1,736	2,021	9,976	5	18,042
2 Rainy River.....	57	20	.....	520	160	97	108	148	28	1,081
3 Thunder Bay.....	39	51	.....	1,217	.....	705	155	2,487	6	4,621
4 Nipigon.....	7	1	.....	.....	.....	194	.....	150	.....	345
5 C.G.R.—Western.....	16	640	.....	726	.....	183	.....	58	.....	1,607
6 C.G.R.—Central.....	27	100	20	15	.....	640	26	330	1	1,132
<b>II. Northern Inspectorate—</b>										
1 Hearst.....	231	3,021	75	4,203	475	3,555	2,310	13,149	40	26,828
2 Cochrane.....	17	1,347	.....	1,217	32	.....	24	25	.....	2,645
3 Abitibi.....	113	137	.....	1,860	5	461	280	1,045	10	3,798
4 Timmins.....	36	43	29	745	300	11	180	1,678	3	2,989
5 Matheson.....	27	11,505	200	652	450	1,002	2,201	3,160	.....	19,170
6 New Liskeard.....	61	352	7	745	.....	6,062	595	2,176	4	9,941
	18	424	.....	502	300	25	40	213	2	1,506
<b>III. Central Inspectorate—</b>										
1 Soo.....	272	13,808	236	5,721	1,087	7,561	3,320	8,297	19	40,049
2 Webwood.....	19	1,626	70	4,121	550	.....	151	76	.....	6,594
3 Sudbury.....	67	2,000	.....	675	.....	4,804	3,651	6,440	38	17,608
4 North Bay.....	39	100	55	5,500	4,340	2,943	1,386	3,143	6	17,463
5 Mississagi.....	61	2,425	23	5,435	458	1,020	8,742	1,443	2	19,548
6 Chapleau.....	7	5	.....	.....	.....	600	5,000	2	.....	5,607
7 Foleyet.....	53	8,158	.....	524	.....	1,047	3,170	5,005	1	9,753
8 Timagami, W. & S.....	121	610	152	67,921	2	12,520	1,552	6,091	1	96,244
9 Timagami, East.....	14	405	.....	3,650	400	604	819	1,392	.....	2,702
10 Timagami, North.....	40	465	.....	682	.....	3,166	200	5,316	.....	5,358
11 Algoma Central.....	26	1,852	.....	9,231	1,275	2,854	52	1,844	20	11,216
	51	71	10	.....	.....	.....	.....	.....	.....	15,357
	498	17,318	311	97,739	7,025	29,555	24,725	30,769	68	207,516

IV. Southern Inspectorate—												
1	Parry Sound.....	24	406	946	203	795	.....	17	151	10	2,528	
2	Muskoka.....	33	200	1	1,500	5,615	305	45	26	12	7,704	
3	Algonquin, North.....	48	2,398	2,390	.....	1,340	814	2,613	2,812	49	12,416	
4	Algonquin, South.....	35	91	15	2,171	2,271	2,056	3,268	5,464	.....	15,336	
5	Madawaska.....	45	707	7,145	1,921	3,848	1,705	4,215	5,390	3	24,934	
6	Trent.....	90	590	3,150	2,854	670	1,044	3,092	1,920	511	13,831	
7	Eastern Reserve.....	11	.....	50	.....	.....	.....	5,530	2,115	20	7,715	
		286	4,392	13,697	8,649	14,539	5,924	18,780	17,878	605	84,464	
Totals.....		1,287	38,539	14,319	116,312	23,126	46,595	49,135	70,093	732	358,851	
Per Cent.....		.....	10.7	4.0	32.4	6.4	13.0	13.7	19.6	0.2	100.0	
1919 Totals.....		1,780	223,022	24,244	102,884	148,471	109,752	123,444	189,701	643	922,161	
1918 Totals.....		965	3,123	1,634	5,661	5,513	1,797	5,303	6,465	676	30,172	
1917 Totals.....		1,110	73,160	135	148,408	2,160	61,806	13,202	82,959	2,334	384,164	

(4) *Permits.*

Permits were issued in 123 townships this season, as compared with 136 townships the previous year. In all, 6,154 permits to burn over 22,767 acres were issued, as compared with 6,635 permits in 1919. The most of this work lies in the Cochrane, Matheson and New Liskeard districts, the three together calling for 97 per cent. of the whole number of permits issued.

## STATEMENT OF PERMITS ISSUED.

Ranger District	Number of Permits			
	1920	1919	1918	1917
Cochrane .....	1,982	2,275	3,493	.....
Matheson .....	1,887	1,691	2,346	.....
New Liskeard .....	1,169	1,557	2,179	.....
Hearst .....	756	702	514	.....
Timmins .....	193	199	651	.....
All other districts .....	167	211	407	.....
Totals.....	6,154	6,635	9,590	3,486

	Number of Permits			
	1920	1919	1918	1917
May.....	1,003	1,536	2,248	.....
June.....	2,011	2,786	2,899	.....
July.....	891	496	2,050	.....
August.....	1,620	1,475	2,156	.....
September.....	629	342	237	.....
Totals.....	6,154	6,635	9,590	3,486

Ranger District	Acreage Burned Over Under Permit			
	1920	1919	1918	1917
Cochrane.....	4,984	5,437	10,267	.....
Matheson.....	5,427	4,769	7,371	.....
New Liskeard .....	9,768	13,521	17,868	.....
Hearst .....	1,478	1,379	1,134	.....
Timmins .....	424	925	1,971	.....
All other districts.....	686	768	1,072	.....
Totals .....	22,767	26,790	39,683	15,185

(5) *Equipment.*

The major equipment added this year included: 74 canoes, 50 tents, 6 portable fire fighting units, 28 railway velocipedes, 1 railway motor car, 2 sixteen-foot power boats, 150 single blankets.

The usual fire posters were sent out.

(6) *Railway Inspection Under B. R. C.*

The same organization of the work of inspection of fire protective appliances on locomotives was continued during 1920, two inspectors devoting all their time to this.

## LOCOMOTIVE INSPECTION, 1920

Railway	Number Inspected					Total Number Engines	Total Number Inspections					Inspections showing defects	Percentage Defective				
	Times						1920	1920	1919	1918	1917		1920	1920	1919	1918	1917
	1	2	3	4	5												
C.P.R. ..	142	82	57	29	13	323	660	499	448	328	111	16.8	29.9	36.4	19.5		
C.N.R. ..	81	47	29	16	5	178	351	317	232	154	28	7.9	15.5	22.4	39.6		
G.T.R. ..	67	42	18	4	1	132	226	155	184	60	11	4.8	11.0	28.3	20.0		
A.C. ....	13	2	1	....	1	17	25	23	36	37	3	12.0	13.0	38.8	45.9		
A.E. ....	3	1	3	....	2	9	26	18	20	36	12	46.1	16.7	70.0	55.5		
						659	1,288	1,012	920	615	165	12.8	21.8	32.1	28.3		

Average cost per inspection \$1.86, as compared with \$2.07 in 1919, and \$2.59 in 1918.

The above table shows that the work of inspecting locomotives has been gradually expanded each year. This year 1,288 inspections were made as compared with 615, 920 and 1,012 inspections in 1917, 1918, 1919, respectively. These inspections embraced 659 locomotives as compared with 531 and 571 in 1918 and 1919.

Furthermore, the cost of this work has been gradually reduced. Inspections this year cost \$1.86 per inspection, as compared with \$2.59 in 1918 and \$2.07 in 1919.

It is satisfactory to find that the percentage of inspections revealing defects has steadily fallen. This year but 12.8 per cent. were defective as compared with 28.3, 32.1 and 21.8 per cent. in the three preceding years. In keeping with these results it is to be noted that the percentage of all fires attributed to railways has decreased regularly each year from 49.5 per cent. in 1917 to 23.9 per cent. this year.

## II. FOREST INVESTIGATION.

This season the first work was done in connection with a definite plan of forest reconnaissance of the Province.

This survey was of the usual nature of such work, detail being reduced in order to give speed. Maps were prepared in the field delimiting cleared (farming)



land from barrens and forest. The forest area was differentiated into hardwood, coniferous, and mixed types, with the poplar-birch type separated from the other hardwoods. The first three types were classified as to condition, namely, moderately culled, severely culled, second growth and young growth. The poplar-birch stands were thrown into two groups on the basis of whether white pine reproduction was in evidence or not.

On these maps showing forest types and conditions, there were also placed roads, trails, abandoned roads, railway lines, existing telephone lines, watershed boundaries, and good locations for lookout points for fire ranging use.

Along with this field mapping, information was compiled by townships, covering such points as present fire hazards, location and numbers of male help available for fire fighting, wood-using industries and mills in existence, nature and extent of other industries such as farming, mining, game and fish, tourist traffic, population, general suitability for agriculture, etc.

The method of work was by foot travel from a central camp with the distances computed by pacing. Camp was moved every few days. This year but one party of three men with cook was engaged in this survey from June to December. They investigated the northern parts of the Counties of Hastings, Lennox & Addington, Frontenac, and Lanark. In all, 1,720,000 acres were mapped at an average cost of one-quarter of one cent per acre.

It is expected that by the end of next season all the country south of the French River and Lake Nipissing will have been done.

Tables showing the classification of the land area which was surveyed are given below. In the case of the Townships of Cashel, Faraday, Herschel, Lake, Limerick, Tudor, and Wollaston only those portions not tributary to Trent waters were covered.

## EASTERN FOREST SURVEY, 1920—CLASSIFICATION OF LANDS.

	ABINGER		ANGLESEA		ASHBY		BANGOR		BARRIE	
	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
I. CLEARED LAND .....	3,317	6.4	2,362	4.4	837	1.7	6,323	16.0	6,059	11.6
II. FOREST:										
1. Hardwood:										
Virgin and moderately culled .....	2,732				4,750		1,714		2,625	
Severely culled .....	2,453		2,184		566		3,769		3,014	
Second growth .....	368		53				1,191		598	
Young growth .....	429				2,352		5,315		1,342	
2. Coniferous:										
Virgin and moderately culled .....	6,002	11.6	2,237	4.2	7,668	15.6	11,989	30.3	7,579	14.5
Severely culled .....	581				480		203		170	
Second growth .....			214				325		301	
Young growth .....	30		107		168		77		66	
3. Mixed:										
Virgin and moderately culled .....	611	1.2	321	0.6	648	1.3	605	1.5	537	1.0
Severely culled .....	1,435		160		5,459		1,247		2,469	
Second growth .....	326		480		512		1,422		2,587	
Young growth .....	1,252		230		1,783		1,808		866	
4. Poplar-Birch, with 10 per cent. coniferous reproduction:										
Standards and poles .....	3,013	5.8	870	1.6	8,290	16.8	4,477	11.3	6,244	12.0
Saplings .....										
5. Poplar-Birch, without coniferous reproduction:										
Standards and poles .....	5,946		2,930		952		3,588		4,772	
Saplings .....	6,129		32,159		14,910		4,516		24,144	
III. BARRENS .....										
Land area investigated .....	12,075	23.2	35,089	65.1	15,862	32.2	8,104	20.4	28,916	55.4
	21,478	41.3	874	1.6	15,956	32.4	8,130	20.5	2,599	5.0
	5,459	10.5	12,114	22.5					232	0.5
	51,955		53,867		49,261		39,628		52,166	

## EASTERN FOREST SURVEY, 1920—CLASSIFICATION OF LANDS.—Continued.

	N. CANONTO		S. CANONTO		CARLOW		CASHEL		CLARENDON	
	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
I. CLEARED LAND .....	245	1.0	2,350	7.5	10,737	22.9	749	2.6	10,852	20.1
II. FOREST:										
1. Hardwood:										
Virgin and moderately culled .....	6,730		5,216		974		7,104		2,613	
Severely culled .....			1,950		1,528		850		2,955	
Second growth .....					1,272				326	
Young growth .....					1,298		560		1,531	
2. Coniferous:										
Virgin and moderately culled .....	6,730	25.8	7,206	22.9	5,072	10.9	8,514	30.5	7,425	13.8
Severely culled .....					1,028		341		114	
Second growth .....					167		302		1,856	
Young growth .....					1,183		141		606	
3. Mixed:										
Virgin and moderately culled .....					2,378	5.1	784	2.8	2,576	4.8
Severely culled .....	336				2,286		829		1,142	
Second growth .....			221		1,286		80		2,688	
Young growth .....					8,178		1,648		880	
4. Poplar-Birch, with 10 per cent. coniferous reproduction:	936	3.6	221	0.7	12,749	27.3	2,557	9.2	4,710	8.7
Standards and poles .....					661		1,222		5,038	
Saplings .....	13,804		18,580		6,082		5,150		6,647	
5. Poplar-Birch, without coniferous reproduction:	13,804	52.9	18,580	59.0	6,743	14.4	6,372	22.8	9,685	17.9
Standards and poles .....									211	
Saplings .....			694		8,638		8,958		14,341	
III. BARRENS .....			694	2.3	8,638	18.5	8,958	32.1	14,552	27.0
Land area investigated .....	4,336	16.7	2,410	7.6	421	0.9			4,127	7.7
	26,051		31,461		46,738		27,934		53,927	





## EASTERN FOREST SURVEY, 1920—CLASSIFICATION OF LANDS.—Continued.

	FARADAY		GRIMSTHORPE		HERSCHEL		KALADAR		KENNEBEC	
	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
I. CLEARED LAND .....	6,995	23.5	173	0.3	7,789	14.6	10,383	14.9	17,873	24.7
II. FOREST:										
1. Hardwood:										
Virgin and moderately culled .....	5,043	.....	1,142	.....	12,867	.....	430	.....	1,128	.....
Severely culled .....	1,358	.....	954	.....	4,330	.....	310	.....	5,434	.....
Second growth .....	510	.....	2,312	.....	649	.....	55	.....	893	.....
Young growth .....	2,112	.....	.....	.....	6,036	.....	.....	.....	224	.....
2. Coniferous:										
Virgin and moderately culled .....	9,023	30.3	4,408	6.4	23,882	44.9	795	1.2	7,679	10.6
Severely culled .....	.....	.....	.....	.....	29	.....	206	.....	.....	.....
Second growth .....	672	.....	226	.....	1,213	.....	.....	.....	437	.....
Young growth .....	.....	.....	.....	.....	550	.....	.....	.....	499	.....
3. Mixed:										
Virgin and moderately culled .....	672	2.3	226	0.3	1,792	3.4	206	0.3	936	1.3
Severely culled .....	987	.....	320	.....	3,019	.....	685	.....	187	.....
Second growth .....	1,920	.....	.....	.....	2,093	.....	2,111	.....	1,472	.....
Young growth .....	362	.....	341	.....	1,454	.....	1,345	.....	2,810	.....
4. Poplar-Birch, with 10 per cent. coniferous reproduction:										
Standards and poles .....	3,269	11.0	661	0.9	6,883	12.9	4,141	6.0	4,469	6.2
Saplings .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
5. Poplar-Birch, without coniferous reproduction:										
Standards and poles .....	2,078	.....	16,304	.....	2,348	.....	2,088	.....	.....	.....
Saplings .....	.....	.....	.....	.....	524	.....	15,214	.....	5,622	.....
6. Poplar-Birch, without coniferous reproduction:										
Standards and poles .....	2,078	6.9	16,304	23.7	2,872	5.3	17,302	24.9	5,622	7.8
Saplings .....	.....	.....	.....	.....	623	.....	.....	.....	.....	.....
7. Barrens .....	7,728	.....	34,490	.....	9,450	.....	17,595	.....	12,658	.....
8. Land area investigated .....	29,765	.....	68,711	.....	53,291	.....	69,513	.....	72,397	.....

## EASTERN FOREST SURVEY, 1920—CLASSIFICATION OF LANDS.—Continued.

	LAKE		LAVANT		LIMERICK		MAYO		MCCLEURE	
	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
I. CLEARED LAND .....	108	5.6	5,851	10.6	563	5.7	8,473	16.9	3,824	7.3
II. FOREST:										
1. Hardwood:										
Virgin and moderately culled .....	740	.....	992	.....	876	.....	8,307	.....	23,592	.....
Severely culled .....	32	.....	2,766	.....	414	.....	3,197	.....	2,805	.....
Second growth .....	.....	.....	1,541	.....	.....	.....	501	.....	584	.....
Young growth .....	.....	.....	.....	.....	.....	.....	870	.....	8,147	.....
2. Coniferous:										
Virgin and moderately culled .....	772	39.8	6,299	11.4	1,290	13.0	12,875	25.8	35,128	67.3
Severely culled .....	440	.....	256	.....	1,912	.....	104	.....	1,576	.....
Second growth .....	.....	.....	.....	.....	.....	.....	48	.....	294	.....
Young growth .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
3. Mixed:										
Virgin and moderately culled .....	440	22.7	256	0.5	1,912	19.3	152	0.4	1,870	3.6
Severely culled .....	80	.....	3,491	.....	245	.....	2,603	.....	226	.....
Second growth .....	.....	.....	1,302	.....	.....	.....	5,184	.....	547	.....
Young growth .....	.....	.....	525	.....	1,544	.....	1,619	.....	1,504	.....
4. Poplar-Birch, with 10 per cent. coniferous reproduction:										
Standards and poles .....	80	4.1	5,318	9.6	1,789	18.1	9,496	19.1	2,277	4.3
Saplings .....	.....	.....	4,293	.....	1,107	.....	3,002	.....	1,445	.....
.....	.....	.....	33,003	.....	.....	.....	10,990	.....	.....	.....
5. Poplar-Birch, without coniferous reproduction:										
Standards and poles .....	.....	.....	37,296	67.9	1,107	11.2	13,992	28.1	1,445	2.8
Saplings .....	540	.....	.....	.....	83	.....	122	.....	.....	.....
.....	.....	.....	.....	.....	2,396	.....	4,578	.....	7,651	.....
III. BARRENS .....	540	27.8	.....	.....	2,479	25.1	4,700	9.4	7,651	14.7
.....	.....	.....	.....	.....	752	7.6	155	0.3	.....	.....
Land area investigated .....	1,940	.....	55,020	.....	9,892	.....	49,843	.....	52,195	.....

## EASTERN FOREST SURVEY, 1920—CLASSIFICATION OF LANDS.—Continued.

	MILLER		MONTEAGLE		OLDEN		OSO		PALMERSTON	
	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
I. CLEARED LAND .....	1,834	3.8	17,710	35.1	21,771	33.1	17,329	38.4	13,938	22.3
II. FOREST:										
1. Hardwood:										
Virgin and moderately culled .....	10,205		8,867		1,742		283		1,136	
Severely culled .....	48		3,773		4,507		2,187		3,744	
Second growth .....			2,214		1,358		4,736		2,436	
Young growth .....	128		1,198		624				608	
2. Coniferous:										
Virgin and moderately culled .....	10,381	21.6	16,052	31.8	8,231	12.5	7,206	16.0	7,924	12.7
Severely culled .....			1,016						710	
Second growth .....			515				432		418	
Young growth .....	48		240		698		243		374	
			72							
3. Mixed:										
Virgin and moderately culled .....	48	0.1	1,843	3.7	698	1.1	675	1.5	1,502	2.4
Severely culled .....	922		2,490		80		608		354	
Second growth .....	813		2,304		501		1,506		2,365	
Young growth .....	448		3,298		3,669		202		1,626	
			779						86	
4. Poplar-Birch, with 10 per cent. coniferous reproduction:	2,183	4.5	8,871	17.6	4,250	6.6	2,316	5.1	4,431	7.1
Standards and poles .....	2,850		619		1,070				1,690	
Saplings .....	25,620		374		3,106		614		5,178	
5. Poplar-Birch, without coniferous reproduction:										
Standards and poles .....			593	1.9	4,176	6.2	614	1.4	6,868	11.0
Saplings .....	4,912		1,456				579		921	
			3,560		13,363		14,392		16,197	
III. BARRENS .....	4,912	10.3	5,016	9.9	13,363	20.3	14,971	33.1	17,118	27.3
Land area investigated .....	227	0.5			13,326	20.2	2,051	4.5	10,782	17.2
	48,055		50,485		65,815		45,162		62,563	





## III. REFORESTATION.

At the Provincial Forest Station in Norfolk County we have the only Provincial forest nursery for the growing of planting stock to be used in the various reforestation projects.

There is at present in these nurseries the following stock:

Scotch Pine ( <i>Pinus sylvestris</i> ) seedlings .....	90,000
“ “ “ “ 3 to 6 inches .....	382,585
“ “ “ “ 6 to 9 inches .....	240,615
“ “ “ “ 9 to 12 inches .....	1,600
Jack Pine ( <i>Pinus banksiana</i> ) seedlings .....	180,000
White Cedar ( <i>Thuja occidentalis</i> ) “ .....	30,000
European Larch ( <i>Larix europaea</i> ) “ .....	30,000
Miscellaneous conifers .....	34,000
White Ash ( <i>Fraxinus americana</i> ) .....	20,525
American Elm ( <i>Ulmus americana</i> ) .....	10,000
Sugar Maple ( <i>Acer saccharum</i> ) .....	11,300
Soft Maple ( <i>Acer dasycarpum</i> ) .....	14,250
Manitoba Maple ( <i>Acer negundo</i> ) .....	11,250
Red Oak ( <i>Quercus rubra</i> ) .....	21,000
Black Locust ( <i>Robinia pseudacacia</i> ) .....	10,500
Black Walnut ( <i>Juglans nigra</i> ) .....	7,600
Poplar cuttings .....	80,000
Miscellaneous Hardwoods .....	15,000
Total .....	1,190,225

During the past season the distribution of nursery stock to private land-owners throughout the Province was continued, 130,000 trees having been shipped. The reforestation done on these areas at various points in the Province will eventually show results by way of demonstration. Many of these experimental plantations are creating local interest in this work and we now have plantations in all of the older counties of the Province. During the past season an officer of the Forestry Branch has been inspecting the older plantations, and it is expected that a definite system of inspection will be inaugurated.

Additional plantations were made at the local forest station in Norfolk, the chief material used this season being white pine. We now have nearly 500 acres of plantations at this station, and a detailed report of growth studies is being prepared. The following is a summary of the rate of growth in some of the older plantations at the Norfolk Forest Station:

Species.	Age after Planting.	Average Height.	Average Diameter.
Jack Pine .....	12 years	21.15 feet	3.50 inches
Jack Pine .....	12 “	20.0 “	2.89 “
Jack Pine .....	9 “	18.4 “	2.8 “
Scotch Pine .....	12 “	19.61 “	2.72 “
Scotch Pine .....	8 “	15.3 “	....
White Pine .....	11 “	12.0 “	....
White Pine .....	11 “	10.2 “	....
Red Pine .....	8 “	9.42 “	....

Fundamental to all reforestation problems is the growing of adaptable nursery stock, and prior to nursery stock is the securing of suitable seed. It is generally recognized by botanists as well as foresters that seed collected from plants in one locality is best for sowing in that same locality. Consequently it has been the policy of this Department, in so far as possible, to collect seed from our native trees for planting in connection with its reforestation work.

It has been customary to collect in the neighbourhood of St. Williams, all the seed necessary for growing hardwoods at the nurseries. The securing of

coniferous seed, however, has not been so easy, owing to the fact that some of the required species do not grow in that part of the Province. Then, too, Scotch pine, not being a native of this continent, most of this seed had to be imported. But with the maturing of the Scotch pine plantations at St. Williams it will soon be possible to gather there all the seed of that species which is required.

The season of 1920 was a good seed year throughout Ontario for the following coniferous species which are needed for the work of this Department; white pine (*Pinus strobus*), jack pine (*Pinus banksiana*), white spruce (*Picea canadensis*),



Scotch pine plantation eleven years old. Planted on blow sand at Provincial Forest Station.

white cedar, (*Thuja occidentalis*), balsam (*Abies balsamea*), tamarac (*Larix americana*) and hemlock (*Tsuga canadensis*). Collecting of these was done at Angus, Ontario, as well as at St. Williams. The quantities of seed of the different species collected are as follows:

	Pounds.		Pounds.
White Pine .....	418	White Spruce .....	239
Scotch Pine .....	70	Norway Spruce .....	6
Jack Pine .....	19	White Cedar .....	139
Red Pine .....	1	Hemlock .....	14

## IV. FOREST PATHOLOGY.

(Report of Dr. J. H. Faull for 1920.)

A greater part of the summer was spent in investigations on the diseases of the timber trees of the Temagami Forest Reserve. In addition, a short time was occupied with a study of certain hardwood diseases in Algonquin Park, the effect of sulphur fumes in the Sudbury District, and the conditions of mine timber decay and preservation in the Cobalt area. The work in the Temagami Reserve was much facilitated through the many courtesies extended by the Chief Ranger, Mr. C. E. Hindson.

## ADDITIONAL NOTES ON THE NEEDLE BLIGHT OF THE WHITE PINE.

Alarming reports regarding the discolouration of the foliage of the white pine have been received by the Department in charge of the forests of Ontario at intervals over a long period of years. The attention of the Department appears to have been called to this matter for the first time in 1905, again in 1908, in 1912, in 1913, and in 1917. In response to a report from Mr. C. E. Hindson, Chief Ranger of the Temagami Forest Reserve in August, 1912, to the effect that "a large number of pine trees in the vicinity of Temagami Lake have turned brown and appear to be dying" a scientific inquiry was promised. Specimens of the injury were submitted to an Experiment Station botanist, but nothing other was done than to venture a guess at the cause; no attempt was made to study the subject or to give any indication of the seriousness of the malady.

Following renewed calls for investigation the first observations were made in the Temagami Forest Reserve in the summer of 1918, and they have been continued during the summers of 1919 and 1920. It was soon ascertained that the injury was not a winter killing of the foliage as had been claimed, for it appeared rather suddenly on the new foliage in July, 1918, the whole forest in affected areas becoming tinted as with autumnal colouration. The same phenomena have been manifest wherever this blight has shown itself during the succeeding summers. The investigations of 1919 revealed the fact that the trouble lay in the roots and that in consequence at the time of leafing when there was a sudden demand for an increased supply of water to the crown, the damaged roots were not able to respond and so the tender new foliage succumbed to a greater or a less extent.

From a practical point of view it has been important to determine whether or not the disease is contagious and to what extent it reduces the yield of the forest. Obviously the answers to these questions must be taken into consideration in formulating a forestal policy with reference to any affected region. The first problem has been decided by direct tests and observations in the negative: the injury is physiological and not communicable. The second problem is one that cannot be solved so quickly and for the reason that we do not yet know to what extent blighting is fatal: no one has followed the history of individual blighted trees in our forests to find out what becomes of them, whether they recover or die, how long the disease may persist or in case of recovery what loss of wood growth may accrue. Such an inquiry demands an annual examination over a succession of years of a large number of marked trees growing under average typical conditions. As a first step in the solution of the problem several hundred trees were marked in the Temagami Forest Reserve in the summers of 1918 and



1919, and a few elsewhere. While the experiment is not yet complete an extensive and valuable body of information is being accumulated and some important conclusions may be drawn from the data in hand.



White pine with needle blight to right of centre; healthy white pine to left.

The blight was especially severe in 1918; there was a slight improvement in 1919 with few new cases; the improvement in 1920 was pronounced. Observations to date show that trees up to six inches in diameter are likely to recover with an amelioration of conditions; but the death rate in older trees is much higher,

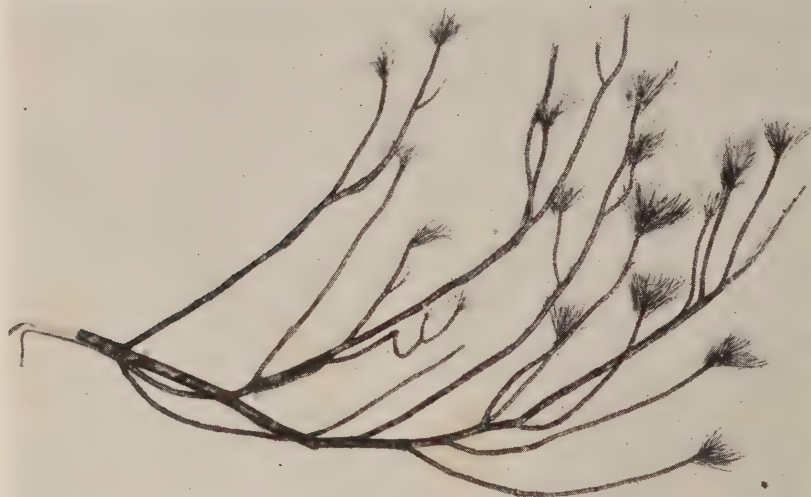


recovery is not so certain, and is much longer delayed. The following figures drawn from the experiment in the Temagami Forest Reserve and corrected up to September, 1920, are significant, though some of them are still to be analyzed with respect to severity or lightness of attack, soil, exposure, etc.

(1) Out of 275 healthy trees of various sizes, noted in 1918 as controls, only 2 are known to have since developed blight.

(2) Out of 320 trees of all ages on a given area (most of them considerably under 6 inches in diameter, and all counted) 30 per cent. of the stand, or 96 trees showed blight in 1918; only  $5\frac{1}{3}$  per cent. of the stand, or 15 trees continued to show blight or had been killed by blight at the close of the summer of 1920.

(3) Out of 147 trees six inches in diameter or less (most of them from 2 to 6 inches) blighted in 1918, 8 or  $5\frac{1}{2}$  per cent. of them were dead in 1920, 39 or  $26\frac{1}{2}$  per cent. continued to show blight, and 100, or 68 per cent. had recovered.



An extreme stage of needle blight of white pine.

(4) Out of 211 trees more than six inches in diameter blighted in 1918, 33, or  $15\frac{2}{3}$  per cent. were dead in 1920, 156, or 76 per cent. continued to show blight (though in nearly one-half of these with diminished intensity) and 22, or  $10\frac{1}{2}$  per cent. had recovered.

As a check on temperature conditions a continuous tracing was made with a recording thermometer at Bear Id., L. Temagami, a blight centre, from June 24th, 1920, to September 13th, 1920. The minimum temperature for that period was 43 deg. F. on August 22nd, and the maximum 89 deg. F. on August 7th.

Eighty-seven deg. F. was recorded on June 26th, July 27th, and August 26th. Forty-eight deg. F. on July 1st was the lowest reading from June 24th to August 21st, inclusive. The records of the Federal Weather Bureau at Bear Id. show that the lowest temperature for June was 42 deg. F. on June 7th, and that the last frost, 32 deg. F., was on May 19th. Evidently frost is not a factor affecting pine blight.

The new needles were just beginning to emerge from the buds on June 21st; there was no indication of blight in them until June 26th, from which date it

developed as the needles continued to elongate. That the blighting of 1920 was neither as severe nor as typical as in 1918 and 1919 is in part due to the fact that the comparatively high temperatures of June 25th and 26th were followed by almost a month of cool weather with high atmospheric humidity, conditions that enabled the developing needles to retain the otherwise insufficient amount of water supplied by deficient root-systems.

## (2) WINTER BROWNING OF CONIFEROUS FOLIAGE IN 1920.

The spring of 1920 was marked by an especially severe browning of the foliage of coniferous trees. No species escaped—white pine, red pine, jack pine, white spruce, black spruce, balsam, arbor vitae, though some fared worse than others. Probably the arbor vitae and balsam suffered most. A few trees were killed outright and many others were so badly browned as to appear dead. Frequently the twigs as well as the needles were killed and no doubt the dwarfed branches on the exposed sides of trees in this northern region owe their deformation in large part to repeated “winter-killing.” There is no doubt likewise but that “winter browning” and needle blight have been confused to some extent in earlier reports on the Ontario forests.

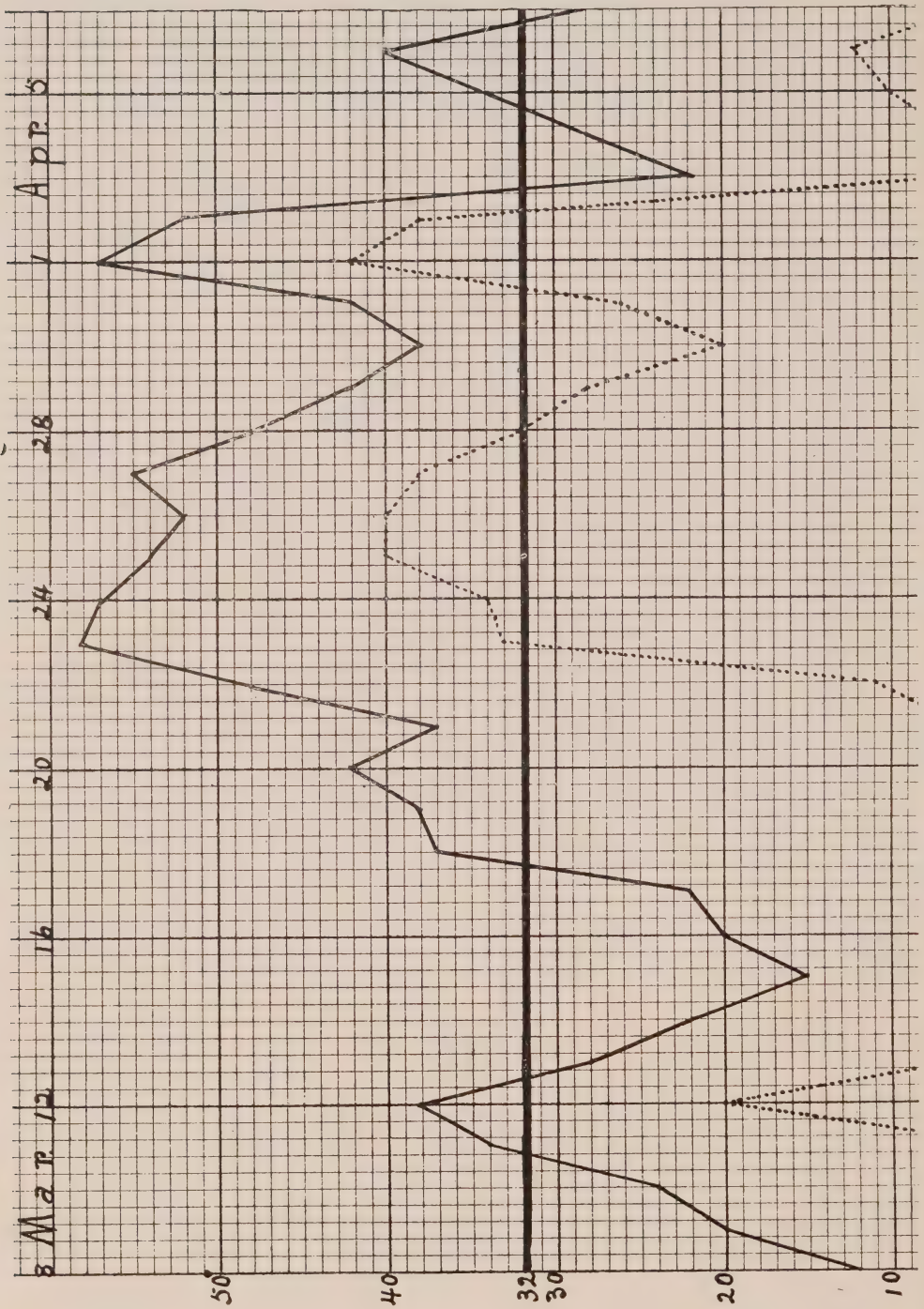
“Winter-browning” affects most severely the needles of the last season (in this instance, the growth of 1919), though the injury may extend to needles of all ages. It also occurs almost exclusively on the side of the tree exposed to the south, and especially on the lower part of the crown. Thus it is especially conspicuous on the southern aspect of trees that line the northern shores of lakes or streams, or cleared or barren areas, or the steep southern slopes of hills. Mostly it is only those needles or parts of needles that are actually exposed to the southern sun that discolour though, as already noted, the injury may involve the stems of small branches as well as the needles.

“Winter-browning” is not due to frost, but to an excessive loss of moisture from the foliage at a time when the ground is still frozen and the roots consequently inactive. It takes place, for example, under the influence of bright sunshine combined with an elevated temperature. The winter browning of 1920 is unquestionably referable to the unseasonably warm bright weather between March 22nd and April 2nd up to within a few days of which the zero weather of the winter had been practically continuous. The maximum temperature of 58 deg. F. was recorded on March 23rd. The accompanying tracing is based on the temperature records made by the Weather Bureau Station at Bear Id., L. Temagami.

## (3) SOME DISEASES OF PULPWOOD TREES OF THE TEMAGAMI FOREST RESERVE.

### (a) “Red Branch” of Balsam.

Balsam is numerically the commonest of the economically important trees of the Temagami Forest Reserve. It grows abundantly everywhere, it grows rapidly, and it commonly succeeds the more valuable pines as a replacement crop in pure or mixed stands. Unfortunately there is no species in the Reserve that is so subject to disease—to such an extent, indeed, that merchantable balsam is found in very limited quantities. Heart rot is the most serious malady to which it is subject, serious from the standpoint of yield, and serious with respect to the health of other associated coniferous timber trees; it will be referred to again in another connection. I wish especially to call attention here to two new or



Maximum and minimum temperatures, L. Tenagami. March 8-April 7, 1920.



imperfectly understood diseases of balsam, namely "red branch" and a twig blight.

"Red branch" of balsam has frequently been noticed by foresters and lumbermen and various explanations have been offered in accounting for the phenomenon. Dead, red-needed branches located here and there throughout a balsam tree are conspicuous objects against the dark green setting of normal living foliage and could not escape observation. One of the theories most frequently advanced in explanation is snow pressure, the breaking or cracking of the bark at the base of the branch due to the weight of accumulated snow.

Aside altogether from any discussion of the part played by snow pressure elsewhere, an investigation of "red branch" of balsam in the Temagami Forest Reserve has demonstrated that its most frequent cause in that area is not snow pressure, but a combination of factors not before suggested, namely, insect-wounding and frost.

An examination of the branch at the base of the dead portion almost invariably shows a more or less extensive spot from which the bark has been removed, a ragged-edged wound at once suggesting the gnawing of some small animal. This spot is usually on the under side; it never extends more than half way around the branch and usually much less, so that the branch is not girdled. It may extend indefinitely towards the tip of the branch, commonly for not more than half an inch, but sometimes for several inches. Occasionally the leader is destroyed in the same way as the branches.

The wound in itself is not sufficient to cause the death of the branch. This was proved by similarly removing the bark with a knife from healthy branches in July of 1919. The wounds healed before the end of the season, and they showed no ill effects of their maltreatment throughout the summer of 1920. But when the wounding takes place so late in the season that there is no time left for covering the edges of the wounds with new tissues the result is different. Twenty-five branches were wounded in the same manner in October, 1919. Without exception every one of these branches died from the point of wounding outward and their foliage was red by the following May.

The cause of the wound is a large bark beetle, identified by Dr. J. M. Swaine as *Monochamus scutellatus*. This beetle occurs abundantly in the Reserve on jack pine, where it gnaws the bark in like manner, but either because of a thick covering of resin or because the wounding is earlier in the season the branches attacked are rarely killed.

A few instances of what appeared to be snow pressure came to hand, but in such cases none of the bark had been destroyed. Likewise instances of removal of the bark by rubbing, or of the pulling off of low-placed twigs on small branches in the fall or winter followed by the death of the branches are not infrequent. But the prevalent cause of the very common "red branch" in the Temagami Reserve is the combination of beetle-gnawing and frost, as described above.

#### (b) *A Twig Blight of Balsam.*

Especial attention is drawn to a twig blight of balsam that appears to have been overlooked or to have been confused with the work of the spruce bud worm. It is plainly not an insect injury though the exact cause is not yet known; an investigation of it is being undertaken. The new growth only is affected, and the injury may involve the entire twig, killing the bud as well as the needles; or the bud may escape, but all or only a few of the needles here and there may





A twig and needle blight of balsam.



5a. A twig and needle blight of balsam. 5b. Cankered trunk of the aspen.

succumb. The killed needles at first turn pale, but later they die, turn brown and curl away from their normal orientation on the branch, continuing, however, to adhere throughout the season and usually for the following year or longer. The new growth throughout the entire tree is commonly more or less involved. In some places the balsam is extensively affected, giving to the forest a browned and ragged effect. I very much question the possibility of distinguishing this blight from the work of the spruce bud worm except at close range—certainly not from a moving railway car or airplane; it merits further attention.

(c) *Canker of Poplar (Aspen).*

The aspen is subject to many diseases, some of which may be so serious as to render large stands practically worthless. Three of these are common in the Temagami district—a *leaf spot*, *white heart rot* and *canker*; the last is perhaps the most destructive though all three must be counted with in estimating the probable yield of a stand. The aspen canker is apparently due to a parasitic agent, possibly bacterial. Trunks of all sizes, branches and even small twigs are liable to attack, and there are indications that once established the infection may extend within the trunk from the point of the primary canker upwards and downwards giving rise to secondary cankers at other points. Infection is especially likely to occur at the bases of branches. The cankers are small at the outset, but the parasite extends the area by repeatedly breaking through zones of the surrounding bark and wound callus; the result is that eventually large open cankers up to a foot or more in length may be formed. This canker disease is under investigation.

(4) HEART ROTS OF CONIFEROUS TIMBER TREES IN THE TEMAGAMI FOREST RESERVE—A PRELIMINARY NOTE.

Preliminary investigations have been undertaken on the heart and butt rots of pines and other coniferous timbers in the Temagami Forest Reserve. It is well known that these rots are due to parasitic fungi, but as yet little is known with regard to their rate of growth, the conditions that favour infection, etc. Even the identity of some of them has not yet been determined by forest pathologists; already in our preliminary studies in Temagami at least one new form, heretofore not described, has come to light. From a practical viewpoint, investigations on the heart rots in this area are desirable for additional reasons, as follows:

1. This area is largely covered with virgin forest, much of which is falling a prey to heart rot. These appear at the present time to offer the most serious problem in formulating a policy with regard to the future of the Reserve. As most coniferous trees approach maturity they become increasingly susceptible to butt and other heart rots; a stage of maximum yield is reached after which the deterioration of the forest is greater than the annual accretion, and this deterioration is accelerated with increasing age. There are indications that such a stage has been reached in considerable areas of Temagami, and these should be carefully examined.

2. The balsam of the Temagami Reserve is especially susceptible to butt rots, to such an extent that little of it attains merchantable size. A very high percentage of the balsam of all ages is affected, probably not less than 75 per cent. The most serious features in this connection relate (a) to the balsam as a breeding ground for heart rot fungi that attack maturing pine and spruce: in some places

the mature pine, spruce and cedar are already largely destroyed; (*b*) to the opening up of spots in the forest through the falling of diseased balsam, etc., which give free sweep to the wind, resulting in great losses of healthy timber from windfall; (*c*) to the littering of the floor of the forest with fallen highly combustible materials which serve as fire traps. Estimates of windfall timber in the



A corner of a balsam and pine stand destroyed by butt rot.

Reserve run up to many millions of feet. Trees in advanced stages of butt rot fall over of their own weight or are easily blown over; in many places, especially where balsam predominates, there is an extensive acreage of this type. It would seem highly important that attention should be drawn to the conditions resulting from diseased balsam so prevalent in the Temagami area.





A large, white pine and small balsam in a stand of heavy timber, killed by butt rot.





A detailed study of the white pine shown in the last photograph. All of heart wood destroyed by brown rot.



A magnificent healthy white spruce, wind-fallen because of opening made in forest by butt rot.

*Appendix No. 49.*

RONDEAU PROVINCIAL PARK, ONT., October 31st, 1920.

HONOURABLE SIR,—I beg to submit my report for the fiscal year ending October 31st, 1920.

Rondeau Provincial Park, situated as it is at the southern portion of the County of Kent, on Lake Erie, with Rondeau Bay or Harbour lying in between it and the mainland, is an ideal summer resort.

## AREA.

The Park covers an area of some 5,000 acres and is about eight miles in length. Its greatest asset is its timber, as it is densely wooded with all kinds of valuable trees, there being seven varieties of the oak family alone. There is also considerable pine, walnut, white wood and all other varieties of hard wood found in Western Ontario. Since it is the largest forest of its kind in Western Ontario it is a source of education and enjoyment to a great many visitors.

## ROADS.

We have two miles of well-built roadway, which has been clayed, then gravelled, and this has made a very satisfactory road. There are also eight miles of roads which are merely trails, which we try to keep in shape, but owing to the light, sandy soil it is not easy travelling for the motor cars, of which there are a great number, especially in the summer season. Road building is greatly handicapped here because of the distance both clay and gravel has to be drawn.

## FISH AND GAME.

There are about 400 deer at large in the Park. Eight are kept in an enclosure. Next year they should be thinned out as they are so plentiful they are very injurious to the young growth of trees, since they browse principally on new sprouts, etc. We have a colony of beaver which have thrived very well; some have gone to other parts of the county, one colony especially being reported in the vicinity of Clearville, where dams have been built and a regular home established. There are also black squirrels, raccoons, and great areas of muskrat grounds. Rondeau Harbour is especially noted for its wild duck, and its good fishing ground, such fish as pike, big-mouthed, black and green bass, and once in a while a muskalonge being caught. Many of our American friends come year after year to indulge in the sport of angling. There are great carp grounds in the bay, as many as 100 boxes having been lifted at one catch.

There are three fishery companies operating on the Lake Erie side of Rondeau Park, it being said to be one of the best fishing grounds in the Dominion.

## NATURAL BIRD SANCTUARY.

Rondeau Park with its dense forest is a real paradise for birds, almost all varieties being found here. We are interested in the raising of wild geese, of which we have a flock of about 40, also wild turkey and wild mallard duck.



Our aviary contains about 100 pheasants, the different varieties being the Reeves, Amherst, Golden, Silver and English Ringneck, there being an especially large stock of the last mentioned; a large number of these birds have been liberated in the Park and have gone out into the outlying districts. Reports say they are doing well.

#### PARK WORK.

This last year dead and down timber to the amount of 70,000 feet has been taken out and by use of a portable mill the timber was sawn into lumber, which is now seasoning and will be ready for repairing and building for the next year.

Our dock is very badly in need of repair and I trust next year it will be repaired if possible or replaced with a new one.

#### STAFF.

Our staff consists of the Superintendent, a gamekeeper and an assistant. The work is very heavy in the spring as all the picnic grounds have to be raked and cleaned, which takes about four weeks, and during the picnic season it takes a half of each day to clean up and keep things in order. We can keep a man busy with the mower and team during early summer as we try to keep about 100 acres mowed and in good shape. The split log drag has to be used during most of the year on the roads to keep them in shape. After the summer season the team is busy hauling gravel and repairing the roads. Through the early summer the gamekeeper's time is taken with the hatching and rearing of pheasants, along with his usual duties, of course. Full details of the general work can hardly be given as each day brings its own work of various kinds.

#### COTTAGES.

There are 35 cottages in the Park, some being on the Eau side and others on the Lake, and 18 parties have applied for leases this year with the intention of building next year. There is one restaurant which has been leased by the year, handling groceries, ice cream, etc. The Independent Order of Daughters of the Empire of Ridgetown were given permission to use the old pavilion for dances once a week, which were very popular, the society clearing \$500.00 during the season. I think next year it would be advisable to make some improvements on the building and manage it ourselves.

#### ACCOMMODATION REQUIREMENTS.

The automobile traffic in summer is enormous, coming from far and near; an ordinary Sunday there are often as many as 500 cars coming and going. The day of the Howard Councillors and U.F.O. picnic we made an estimate of about 12,500 visitors. A hotel is very much in demand as we have no accommodation for the ever-increasing number of people who desire to come for their summer vacation, etc. I am continually receiving inquiries from people at a distance who have heard of Rondeau Park, asking if they can secure accommodation.



## BEACH ADVANTAGES.

Our bathing beach is admitted to be one of the best, there being no banks or stones, etc., and the bay being three and one-half miles across at the widest part and seven miles long, it is excellent for boating. There could be no more ideal place for making golf links than we have on the lower end of the Park.

Yours very truly,

GEORGE GOLDWORTHY,

*Superintendent Rondeau Provincial Park.*

*Honourable Beniah Bowman,  
Minister of Lands and Forests,  
Toronto, Ont.*

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REPORT  
OF THE  
Minister of Lands and  
Forests

OF THE  
PROVINCE OF ONTARIO

For the Year Ending 31st October

1921

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PRINTED BY ORDER OF  
THE LEGISLATIVE ASSEMBLY OF ONTARIO

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TORONTO:

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1922





Provincial Parks' Exhibit, Toronto Exhibition, 1921

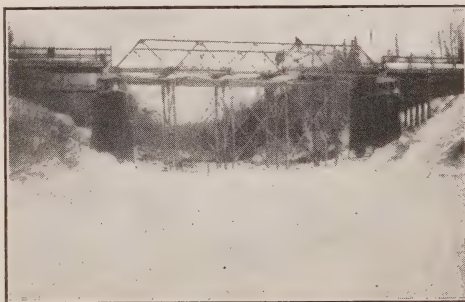
# CONTENTS

	PAGE
Minister's Preface.....	5
APPENDICES:	
No. 1. Department Inside Officers and Clerks.....	18
2.       "       Outside Agents and Inspectors.....	21
3. Statement of Lands Sold and Leased with Collections.....	23
4.       "       Gross Revenue.....	24
5.       "       Receipts (Special Funds).....	25
6.       "       Gross Disbursements.....	26
7.       "       Timber Cut and Amounts Accruing <i>re</i> Dues, etc.....	34
8.       "       Patents, etc., issued.....	36
9.       "       Revenue from Woods and Forests.....	37
10. Successful Candidates at Cullers' Examination.....	38
11. Statement of Work in Military Office (Lands Branch).....	38
12.       "       Letters, Reports, Documents Received and Dispatched.....	39
13.       "       Locations, etc., under Free Grants Sec. P. L. Act.....	40
14.       "       Lands Sold.....	48
15. Report of Director of Surveys on Crown Surveys.....	53
15a Statement of Municipal Surveys Confirmed.....	57
16.       "       Municipal Surveys Ordered.....	58
17.       "       Crown Surveys in Progress.....	59
18.       "       Crown Surveys Completed.....	61
19. Surveyor's Report, Base and Meridian Lines, District of Patricia.....	63
20.       "       Base and Meridian Lines, District of Thunder Bay.....	68
21.       "       Base and Meridian Lines, in vicinity of Abitibi and Mata- gami Rivers, District of Timiskaming.....	70
22.       "       Survey of Township Outlines, District of Thunder Bay.....	72
23.       "       Survey of Certain Township Outlines, North of C. P. R., District of Thunder Bay.....	74
24.       "       Survey of Certain Township Outlines, North of C. P. R., District of Sudbury.....	77
25.       "       Survey of Certain Township Outlines, North of C. P. R., District of Sudbury.....	78
26.       "       Survey of Certain Township Outlines, North of C. P. R., District of Sudbury.....	80
27.       "       Survey of Certain Township Outlines, North of C. P. R., District of Sudbury.....	81
28.       "       Survey of Certain Township Outlines, District of Sudbury..	84
29.       "       Survey of Certain Township Outlines, District of Sudbury..	87
30.       "       Survey of Township Outlines along the Wagamacie River, District of Timiskaming.....	89
31.       "       Survey of Township Outlines in Districts of Sudbury and Algoma.....	91
32.       "       Survey of Traverse of Lake Penage Islands and other Lakes and Outlets, District of Sudbury.....	93
33.       "       Survey of southerly parts of Ground Hog and Kapuskasing Rivers and tributary Streams and Lakes, Districts of Sudbury and Algoma.....	94
34.       "       Survey of Traverse of Certain Rivers and Lakes, District of Algoma.....	98
35.       "       Continuation of Traverse of Missinabi Lake and River, Districts of Algoma and Sudbury.....	101
36.       "       Survey of Traverse of Part of Montreal River, District of Timiskaming.....	106

## APPENDICES:

PAGE

No. 37.	Surveyor's Report, Meridian Lines in District of Patricia.....	109
38.	“ Survey of Traverse of Certain Lakes and Rivers, Townships of Wallbridge and Harrison.....	116
39.	“ Survey of Addition to Townplot of Hearst, District of Algoma.....	119
40.	“ Re-survey Certain Lines of the Township of Pardee.....	120
41.	Quetico Provincial Park, Superintendent's Report.....	122
42.	Algonquin Provincial Park, Superintendent's Report.....	123
43.	Rondeau Provincial Park, Superintendent's Report.....	125
44.	Colonization Roads, Superintendent's Report.....	130
45.	Highways and Bridges under Northern Development Branch.....	154
46.	Northern Development Branch, Statement.....	194
47.	Settlers' Loans, Commissioner's Report.....	206
48.	Forestry Branch Report.....	207
49.	Agreement between Province and E. W. Backus, <i>et al.</i> , dated Sept. 13th, A.D. 1920.....	267
50.	The English River Pulpwood and Timber Limit Agreement.....	270
51.	The Nipigon Pulp and Pine Limit Agreement.....	276
52.	The Nagagami River Pulp and Timber Limit Agreement.....	282
53.	The Long Lake Pulp and Timber Limit Agreement.....	287



Bridge over Blanche River, near Englehart,  
Timiskaming District.



# Report of the Minister of Lands and Forests of the Province of Ontario

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For the Year Ending 31st October, 1921.

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*To His Honour the Lieutenant-Governor of the Province of Ontario.*

MAY IT PLEASE YOUR HONOUR:

I have the honour, in conformity with the provisions of the Public Lands Act respecting the proceedings and transactions of the Department of Lands and Forests, to submit for the information of Your Honour and the Legislative Assembly, a report for the fiscal year ending the 31st day of October, 1921, covering the management and operations of the Department in its various branches.

The fiscal year ending 31st October, 1921, may well be regarded as the most successful in the history of the Province so far as the Department of Lands and Forests is concerned, from the viewpoint of movements in land transactions (when the war conditions and the reconstructive period subsequent thereto are considered) and in timber operations and of revenue results.

## LANDS.

While the year 1919-20, the second year after the war, indicated a tendency towards a return to normal in the acquiring of lands for settlement, the past year shows a considerable increase over that of 1920, both as respects the numbers taking up Free Grant lands and those purchasing farming locations under settlement regulations. There has been an appreciable influx of settlers to the great Clay Belt of Northern Ontario, particularly that section traversed by the National Transcontinental Railway, and they are of such a class that will in all probability succeed in pioneer work. The prospects of a development at Kapuskasing, following the Spruce Falls Company acquiring the timber limit there, gave an added impetus to the demand for settlers' locations, and again it is more or less axiomatic that during any stage of labor depression, with its resultant lack of employment, an eagerness is manifested amongst a certain class to secure Crown land under the reasonable terms held out.

The revenue derived from the sale and lease of lands and rentals of water powers reached over \$215,000.00, the largest in the experience of the Department within the last 20 years, except for the year 1912 (when two townships, Haggart and Kendry, were sold holus bolus for approximately \$100,000.00 to a Colonization Company, the cancellation of whose agreement the Crown is now contemplating), and with the exception of a few years, the largest since Confederation.

Systematic inspections as time and staff afforded were regularly made towards checking up delinquent settlers, and as a result of such inspections



a goodly number of claims were cancelled. Over 800 settlers who proved up acquired their patents.

Particulars in respect of land transactions are hereafter detailed.

#### CLERGY LANDS.

There were sold and leased of the Clergy lands during the year  $12\frac{1}{2}$  acres for \$31.25, and the collections on account of these and former sales of such lands amounted to \$612.90. (See Appendix No. 3, page 23).

#### COMMON SCHOOL LANDS.

Of these lands, the collections during the year from sales and leases amounted to \$3,447.80, but there were no sales. (See Appendix No. 3, page 23.)

#### GRAMMAR SCHOOL LANDS.

The area of these lands sold during the year was  $57\frac{1}{2}$  acres for \$28.75. The collections on account of these and former sales amounted to \$529.84. (See Appendix No. 3, page 23.)

#### UNIVERSITY LANDS.

The number of acres of these lands sold and leased during the year were 836.38 for \$418.25. The amount collected on account of these and former sales was \$1,917.67. (See Appendix No. 3, page 23.)

#### CROWN LANDS.

The total area of these lands sold for agricultural and townsite purposes during the year was 139,026.86 acres for \$143,059.02. The collections on account of these as well as former sales amounted to \$135,862.27. This shows a marked increase in the sale of lands as compared with former years. For instance, in 1920 the number of acres sold amounted to 72,500. The collections from sales show an increase of over 50 per cent.

The total area leased was 20,524.85 acres for \$2,286.50. The collections from these sales and leases amounted to \$56,588.93. From this it will be seen that the area leased is double that of the previous year.

There were 21 acres leased in the Timagami Reserve and collections of previous sales amounted to \$900.50. (See Appendix No. 3, page 23.)

#### SETTLERS ON PURCHASED LANDS.

As shown in the preceding paragraphs, there has been an increased demand for this class of land and from the inquiries received indications are that this influx will continue. Land in the agencies of Englehart, Matheson, Cochrane and Hearst is being largely acquired by actual and bona fide tillers of the soil.

The actual number of purchasers was 736, while permission was granted to 314 to assign their interests covering an area of 44,637 acres, which were taken up by other settlers. The purchase price in full was paid in all these cases.

There were 398 sales cancelled, as the purchasers had failed to comply with the regulations as regards actual settlement, and these lands were again placed in the market to be acquired by actual settlers.

During the year the settlement duties were completed by 307 settlers and they were granted patents for their land.

A large number of returned soldiers from the war were granted areas of 160 acres free during the year, the total number being 257. (For details see Appendix No. 13, page 40.)

#### FREE GRANTS.

A continued desire of settlers to take land for Free Grant homesteading has resulted in another increase over former years, 868 parties being located for free grant lands. More productive farming of somewhat smaller areas, and more care in the selection of land suitable for that purpose, is shown by the fact that the average individual farm has decreased from 166 acres to 136 acres, the total area located being 118,637 acres.

The number of settlers who completed their requirements of clearing and actual residence has also increased to the number of 500, while 132 locatees availed themselves of the statutory privilege to purchase additional land and 10,202 acres were purchased in that way. This is an increase of over 4,000 acres from last year. (See Appendix No. 13, page 40.)

#### RANCHING.

There is a growing demand for land for ranching and pasture purposes as a result of the policy adopted by the Department, of leasing these lands at five cents per acre per annum, easy conditions as to stocking. Farmers who have their farms practically all under grain crops are acquiring additional areas and enlarging their activities to that of sheep and cattle raising. Rough areas of land more adapted for ranching or pasture have been largely taken up for this purpose, and during the year eight licenses of occupation have been issued, covering an area of 10,435 acres.

Several inquiries have been received for marsh or low lying lands for the purpose of raising muskrats and other fur-bearing animals, which promises to be an industry which may make valuable lands that at the present time have practically no market value.

#### MILITARY GRANTS.

Under the Act 1, Edward VII, Cap. 6, and amendments thereto, there have been issued 13,998 certificates and although the time for receiving applications for these grants expired on the 30th September, 1908, there are still letters being received from men or their next of kin, who were entitled to this grant, who claim that they have only now become aware of the fact. These applications, therefore, could not now be accepted and no forms of applications have been sent out.

During the past year there have been located 27 of these certificates covering 4,360 acres in the townships open for veterans, making in all a total of 8,391 certificates thus located.

In two cases the certificates have been surrendered and applied in payment of lands purchased from the Crown, covering in all 160 acres, making a total of 800 that have thus been applied.

There were two certificates surrendered to the Crown for the \$50.00 commutation money, making a total of 3,266 certificates surrendered in this manner.

During the year there have been issued 48 patents for lands located by veterans. and in all, 7,488 have thus been disposed of.

The total number of certificates that have therefore been disposed of is 12,505, leaving 1,493 that are still outstanding.

During the year 10 veteran locations, covering 1,590 acres, were cancelled for the non-performance of the settlement duties to which they became subject on account of being assigned before patent issued. (See Appendix No. 11, page 38.)

#### COLLECTIONS.

The total revenue, the largest ever received, from all sources was \$4,035,747.94, or over one million dollars more than the preceding year. The sale of agricultural lands and townsites, with Crown leases, including Provincial Parks, provided \$217,151.76; Fees \$2,020.63; Refund items \$53,135.07. From Woods and Forests the revenue was \$3,763,440.48, classified as follows: Bonus \$1,555,770.69; Timber Dues \$1,921,356.95; Ground Rent \$99,245.12; Transfer Fees \$5,810.00; Fire Protection \$181,257.72. (See Appendix No. 4, page 24.)

#### DISBURSEMENTS.

The total expenditure, less Civil Government, of the Department for all services (exclusive of those rendered under the Northern and North-Western Ontario Development Acts, for which see Appendices Nos. 45, 46 and 47), was \$2,029,453.27. Some of the more important items were: Crown Land Agents' Salaries and Disbursements, \$20,717.00; Homestead Inspectors, \$25,556.58; Crown Timber Agents, \$35,860.70; Fire Ranging, \$547,474.47; Forest Ranging and Measurement of Timber, \$339,428.11; Reforestation, \$83,372.63; Algonquin Provincial Park, \$40,705.81; Quetico Provincial Park, \$13,606.37; Rondeau Provincial Park, \$15,295.90; Surveys, \$145,169.99; Colonization Roads, \$506,180.80; Commissions re Sundry Investigations, \$63,781.05; Special Warrants, \$58,178.77; Special Survey, Ontario and Manitoba Boundary, \$12,500.00; Clearing Fire Hazards and Kapuskasing Lands, \$14,786.81. (Additional details are found in Appendix No. 6.)

#### WOODS AND FORESTS.

**TIMBER RETURNS.**—Revenue accrues from timber transactions amounted to \$3,698,267.73, the largest in the history of the Province, as against \$3,120,808.41 for last year, and indicate the extent to which operations were conducted during the fall of 1920 and the winter of 1921. The Department succeeded in collecting some \$65,000 more than the ordinary accrued revenue, a follow-up system having been introduced along with the practice of continuing to insist upon payment where such would not tend to cripple an industry and the Crown was amply protected by cash deposits and guarantee bonds.

An important factor in the increased revenue was the raise in the timber dues made by the present government in April, 1920. Pine dues were raised to \$2.50 per M. feet B.M.; Spruce Pulpwood to 80 cents a cord, and other Pulpwoods to 40 cents a cord, while increases in respect of other classes of timber and wood were made all along the line.

The Timber Revenue collected totalled \$3,763,440.48, an increase over 1920 of \$1,106,809.97.

During the past season 336,957,487 feet B.M. of sawlog, boom and square pine timber was cut, or an increase of 24 million feet over the previous year's cutting. Saw log timber, other than pine, was cut to the extent of 66,811,220 feet B.M., as against 52,729,965 feet B.M. for the season of 1919-20, or an



increase of over 14,000,000 feet B.M. Boom and dimension timber, other than pine, cut totalled 3,581,015 feet B.M. Square timber amounted to 83,066 cubic feet, while piling accounted for 48,187 lineal feet and 438,412 feet B.M.

The cut of pulpwood on Crown lands reached the unprecedented figure of 928,185 cords, or over three times the quantity taken out the previous season.

The same activity in tie production did not continue throughout the year as in the two years immediately preceding, as only 4,001,471 ties were returned; the heavy stocks the railways had carried over from their former contracts and the diminution in railway construction lessened the demand. (See Appendix No. 7, page 34.)

**LUMBER INDUSTRY.**—The general depression existing throughout the country has had a serious effect upon the lumber market, which has not a very bright outlook for the coming year. Although I understand from certain dealers the situation is somewhat improving, there is a pessimistic tone found particularly amongst the small operators, and this will materially affect their bush business this coming year. A number of the small operators with heavy unsold stocks on hand, hesitate to put organizations in the woods because of the uncertain prospects and but few of the large firms are undertaking to conduct operations to the peak of the past year. While labour during 1920-21 was considerably high and cost of production proportionately so, the outlook for next season points to lower wages and a consequent reduction in overhead expenses. Because of cheaper and more efficient labour, larger operators are prepared to take their chances on an improvement in an unstable market.

**PULPWOOD.**—The upward trend of pulpwood induced by the constant and sustained market during the war, continued throughout 1919, and resulted in unprecedented operations in the bush, there being no less than 928,185 cords, as above stated, cut from Crown lands during the fiscal year ending the 31st October, 1921, or 621,489 cords in excess of that taken the previous year.

A decided lull in the pulpwood business, however, set in before the large stock could be marketed, and the industry has been most adversely affected; the outlook at present for an early return to conditions approaching those of a few years ago are not the brightest.

The general declining market for Ontario pulp in the United States has been accentuated by the European importations, particularly from Germany and Scandinavian countries, the rate of exchange working to the serious disadvantage of American producers in Ontario. The restrictions thus imposed upon our pulp and paper are for the time keenly felt. The Kapuskasing limit is not being worked this year owing to the market conditions, and while during the season of 1920 the English River Concession was sold, and Nipigon, Naganami and Long Lake were disposed of during the past year, there is apparently no prospect of an immediate development. Efforts, I understand, are being made towards bringing about legislation in the United States for a correction in the tariff laws to stabilize exchange and any measure leading to this end would benefit the producers and proportionately enhance the demand. With a gradual consumption of the somewhat abnormal stocks of pulp and paper now held will come, it is hoped, a further call for the raw material and then there will be a resumption of the industry and trade.

Pulpwood agreements, covering important areas, to the number of four, were entered into, as follows:

**ENGLISH RIVER**, District of Kenora, 3,046 square miles. (See Appendices Nos. 49 and 50.)



NAGAGAMI PULP AND TIMBER LIMIT, District of Algoma, 2,300 square miles. (See Appendix No. 52.)

LONG LAKE LIMIT, District of Thunder Bay, 3,400 square miles. (See Appendix No. 53.)

NIPIGON PULP AND PINE LIMIT, District of Thunder Bay, 1,240 square miles. (See Appendix No. 51.)

It is considered desirable and advisable to furnish for public reference a regular list of timber berths sold each year, and while I intimated in last year's report such a list was being prepared for the present report, I have decided to collate such data under a separate publication as may be necessary to cover the timber sales and pulp concessions effected not only since the change of Government in 1919, but for a reasonable period prior to that. Dating from such separate publication, the timber sales should appear annually in the Minister's Report.

#### LANDS UNDER LICENSE.

The area under license at the close of the fiscal year 31st October, 1921, was 19,855½ square miles, on which a ground rent of \$5.00 per square mile is charged. This was an increase of 4,960¼ square miles over the previous year.

#### SUMMARY OF TIMBER REVENUE.

Bonus.....	\$1,555,770.69
Timber Dues.....	1,921,356.95
Ground Rent.....	99,245.12
Transfer Fees.....	5,810.00
Fire Protection.....	181,257.72
	<hr/>
	\$3,763,440.48

#### CULLERS' EXAMINATION.

Two examinations were held during the year, one at Callander and one at Kenora, on the 28th day of September, 1921.

Seven candidates successfully passed the examination and were duly granted certificates authorizing them to act as Cullers.

(For names of Cullers who passed at these examinations, see Appendix No. 10, page 38.)

(For complete list of Licensed Cullers, see Minister's Reports for 1917, 1918, 1919 and 1920.)

#### TIMBER COMMISSION.

The Special Commission consisting of Justices W. R. Riddell and F. R. Latchford, appointed in March, 1920, to inquire into the management and disposition of the timber resources of the Province, has not yet submitted its main report, though it did hand down certain interim reports. The complete report, when made will no doubt, be duly printed. In the meantime references to its work and results are unnecessary.

## CROWN SURVEYS.

During the year surveys carried on in the northern part of the Province consisted of the running and posting of several base and meridian lines, township outlines, lake and river traverse, including the survey of islands therein.

The Inter-Provincial Boundary between the Provinces of Ontario and Manitoba north from the Winnipeg River, has also been defined on the ground for a distance of 70 miles.

Government Town Plot surveys have been made at Kapuskasing, in the District of Timiskaming, and at Hearst, in the District of Algoma, and Government Park Lots surveyed at Bala in the District of Muskoka.

Approval has been given to private town plot subdivisions on lands patented since 1910 pursuant to R.S.O. 1914, chapter 34, as follows:

Town Plot of Calvert, in the Township of Calvert, District of Timiskaming.  
Town Plot of Capreol Addition, in the Township of Norman, District of Sudbury.

Kirkland Lake Extension, in the Township of Teck, District of Timiskaming.  
Swastika Addition, in the Township of Teck, District of Timiskaming.  
Moonbeam, in the Township of Fauquier, District of Timiskaming.

## MUNICIPAL SURVEYS.

Pursuant to sections 15, 16 and 17 of the Surveys Act, petitions for re-surveys of original road allowances have been received from the Corporations of the Municipalities of:

City of Toronto,  
Township of Hinchinbrooke,  
Township of Maidstone,  
Township of Sandwich East,  
Township of Anderson,

and the necessary instructions have been given for the required surveys.

The municipal surveys which were being performed under instructions of prior date and which were confirmed during the year were those on petition from:

- (a) Township of Beverley.
- (b) Township of Gloucester.

Detailed descriptions and reports of the several surveys made will be found in Appendices 19 to 40, inclusive.

## PARKS.

The Department, for the first time in its history, installed an exhibit at the Canadian National Exhibition, Toronto, of the Forests and Wild Life from its National Forest Reserves and wild life sanctuaries, Algonquin, Quetico and Rondeau Parks.

A picturesque log cabin representing the forest ranger's home, snugly set against a background of spruce, pine, balsam and birch trees, with wild animals and feathered creatures in the foreground proved attractive.

Included in the many and distinguished visitors who viewed the exhibit was the Governor-General, who expressed himself thus: "This is a revelation and an education to me. To see a section of our northland hastily bundled

together in quaint frontier disorder, with the aroma of the forest still clinging about it, brought down and planted on the doorstep of Toronto, affording the public an opportunity to catch a breath of the pine, the spruce and the balsam. It is wonderful."

Dr. Powell said: "Why do the teachers neglect this exhibit? Here the children can receive object lessons in one visit, which are a hundred times more impressive, more lasting and more interesting than can be derived from books in six months' study."

Part of the exhibit were live bears and beavers, a family of Canada red deer, fisher, porcupine, foxes and raccoons, together with silver and golden pheasants, Lady Amhersts, Reeves and English pheasants. There were trees of twenty inches in diameter cut down by the industrious beaver; traps used only in Algonquin Park for capturing wild animals alive without injury; great grey timber wolf skins; Indian guides making birch-bark canoes and a squaw lacing snow-shoes. Cones and pine needles were used to typify the floor of the forest.

The whole exhibit proved interesting and educative and should be reproduced annually along improved lines to impress visitors from all parts of the world and our own people with the wealth of our natural resources.

(For the reports on the parks by the Superintendents, see Appendices 41, 42 and 43.)

#### COLONIZATION ROADS.

The sum of \$506,180.80 was spent on this service, of which \$420,467.53 was spent in organized municipalities, the balance being devoted to unorganized municipalities. The class of work covered the construction and repair of roads, and bridges, and the purchase of road machinery. The Branch carried on the work of inspecting and surveying new road sites and of mapping old roads down, the importance of which work has been minimized in the past. It is proposed to continue the surveying and mapping of roads that adequate records may be had of the roads built and reliable data as to the roads which the Branch contemplates constructing.

For details of the work carried on and expenditures made, see Appendix No. 44, page 129.)

#### NORTHERN DEVELOPMENT BRANCH.

The expenditures carried on by this Branch under statutory authority of the Northern and North-western Ontario Development Act totalled \$1,612,522.37, of which over 85 per cent. was spent in the making of roads and bridges. The balance was used to carry on the advancement of settlement and colonization, under which assistance to settlers was granted in the way of purchasing hay, oats, seed grain and cattle. Creameries were assisted and advances or loans made to settlers through the Settlers' Loan Commissioner.

(For detailed information in connection with the work done see Appendices Nos. 45 and 46, pages 152—203 inclusive.)

(For full information in connection with the Settlers' Loan Accounts, see Appendix No. 47, page 204.)





Re-forestation Exhibit, Toronto Exhibition, 1921.



## FORESTRY BRANCH.

## FIRE PROTECTION.

This past season forest fire protection was made very difficult owing to the lack of snow during the winter and the extremely dry weather prevailing in most parts of the Province during the summer. The small amount of snow during the winter disappeared very early in the spring. In many districts very little rain fell until August, and in some districts late in September. It is interesting to note that fires of railway origin are rapidly decreasing. The following table shows the percentage of fires of railway origin:

In 1917.....	49.5 per cent.
In 1918.....	46.5 per cent.
In 1919.....	37.0 per cent.
In 1920.....	23.9 per cent.
In 1921.....	14.8 per cent.

It is felt that the improvement in connection with fires of railway origin is largely due to the increased protective methods applied along railway lines and largely to the increased efficiency of locomotive inspection work. During the past season 1,526 round-house inspections were made, showing a decrease in the number of defective locomotives over past years. In 1918 there were 32 per cent. of the locomotives defective; in 1921 only 8.3 per cent. were found defective.

As usual a large percentage of the area burned over by fires during the past season occurred on cut-over lands. As might be expected, these cut-over areas, with the resultant slash, are very difficult to protect.

During the past season 5,966 permits were issued for the burning of slash, which covered 23,678 acres.

The most important additions to equipment during the past season was the securing of additional portable fire fighting pumps. These pumps are supplied with 500 to 1,000 feet of hose and have more than saved their cost in saving wood products in connection with fire protection.

## FOREST INVESTIGATION.

During the past season the Forestry Branch has completed a survey of the southern portion of the fire district commonly known as the Huron-Ottawa region. From this survey working plan and maps are being prepared in connection with forest protection and reforestation on the old cut-over areas of this region.

## REFORESTATION.

The outstanding feature of the work in reforestation during the past season has been enlargement of the Provincial Forest Station in Norfolk County. At this station large quantities of coniferous seeds were sown during the past spring, and a very fine stand of one year old seedlings has been obtained.

The nurseries at present have a total of some nine million plants, which should insure at least seven or eight million plants ready for final planting.

An enlarged water system has been installed with a 20,000 gallon tank, which, it is expected, will meet the requirements of the new nursery development.

The distribution of trees to private applicants was increased over the previous year. 291,769 plants were distributed for demonstration plantings by private owners.

In addition to experimental planting made at the forest station in Norfolk County, a new sub-station was opened in Prince Edward County, where some 150 acres were planted on the sand dune formations near West Lake.

The collection of tree seeds has been greatly enlarged and during the past season a fine quantity of native Norway or Red Pine was secured. The Red or Norway Pine is well suited for the planting of sandy waste lands of the Province, and we desire large quantities of nursery stock of this species.

#### TREE DISEASE.

The investigation of tree diseases was again carried on by the Forestry Branch in the Timagami Forest Reserve region. (Details of this work will be found in the Forestry Branch Report, Appendix No. 48.) It would appear that the insect and other organic enemies of our forest trees will soon prove as serious a menace as forest fires. It is hoped that some adequate solution of this problem may be found.

#### OFFICERS SUPERANNUATED.

(1) J. H. Bradshaw, Clerk in Colonization Roads Branch; appointed June 10th, 1884, and superannuated January 1st, 1921.

(2) J. B. Cook, Clerk in the Woods and Forests Branch, appointed August 7th, 1894, and superannuated January 1st, 1921.

(3) Major J. A. G. Crozier, Advisory Clerk Chief, Woods and Forests Branch, appointed December 1st, 1867, and superannuated January 1st, 1921.

(4) W. F. Lewis, Clerk in the Surveys Branch, appointed March 1st, 1872, superannuated January 1st, 1921.

(5) W. Carrell, Engrossing Clerk, Lands Branch, appointed December 18th, 1899, superannuated May 1st, 1921.

(6) H. E. Johnston, Chief Clerk, Military Branch, appointed March 25th, 1905, and superannuated May 1st, 1921.

(7) C. S. Jones, Clerk of Patents, appointed May 22nd, 1896, and superannuated July 1st, 1921.

(8) D. G. Ross, Accountant, appointed April 15th, 1861, and superannuated June 1st, 1921.

(9) R. H. Hodgson, Clerk in Woods and Forests Branch, appointed October 15th, 1903, and superannuated October 31st, 1921.

(10) J. J. Murphy, Advisory Chief Clerk, Lands Branch, appointed May 1st, 1872, and superannuated October 31st, 1921.

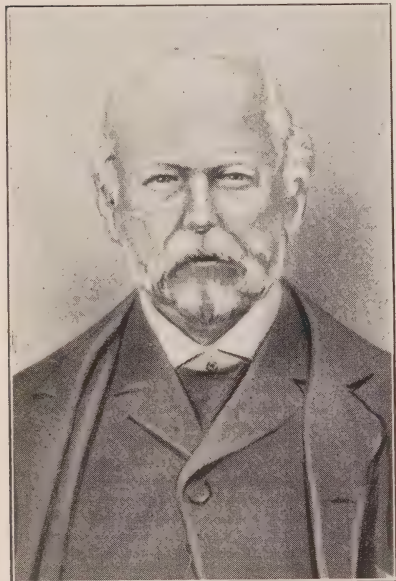
Of the above, it is observed that Messrs. Ross, Crozier, Lewis and Murphy each served a half century or more in the service of the Crown, Mr. Ross having been appointed prior to Confederation Major Crozier having entered the Provincial service in Confederation year, and Mr. Lewis and Mr. Murphy in the early part of 1872.

These officials faithfully served the Crown's interests all these years and ably assisted the various administrations in the numerous projects towards the development of the Crown Lands, and were responsible in no small measure for the important statutes and regulations governing the disposition of Ontario's natural resources. While their severance from the Department is keenly felt,

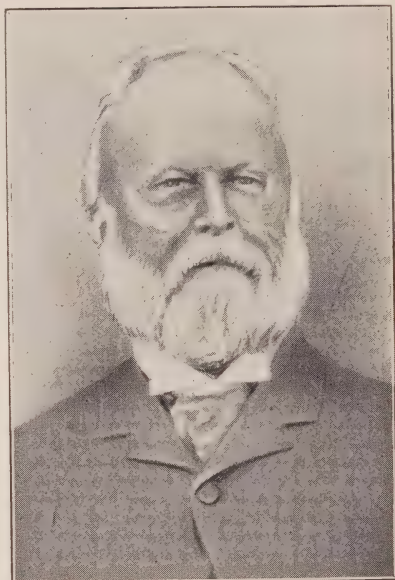
there is a satisfaction that they take their departure in the knowledge of duty well done. It is a pleasure to record that each of these officials under the Superannuation Act is provided with an annuity to assist in declining years and to partially compensate for the untiring efforts devoted to the interests of the Crown.

BENIAH BOWMAN,  
*Minister.*

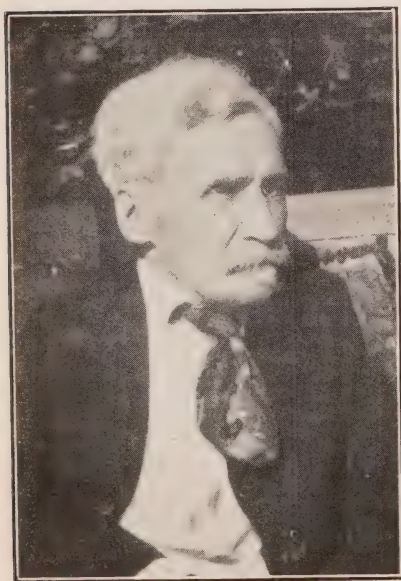
Department of Lands and Forests,  
Toronto, October 31st, 1921.



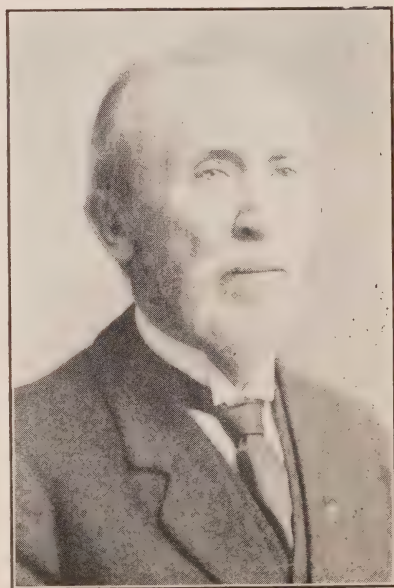
MAJOR J. A. G. CROZIER



W. F. LEWIS



D. GEO. ROSS



J. J. MURPHY

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# APPENDICES

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## Appendix No. I.

Return of Officers and Clerks of the Department of Lands and Forests, for the year ending October 31st, 1921.

Branch.	Name.	Designation.	When Appointed.	Salary per annum.	Remarks.
Lands Branch	Hon. B. Bowman.....	Minister.....	1919, Nov. 14.....	\$6,000 00	
	Albert Grigg.....	Deputy Minister.....	1915, Oct. 18.....	5,100 00	Resigned September 30, 1921.
	W. C. Cain.....	do.....	1903, Mar. 1.....	4,800 00	
	F. J. Niven.....	Minister's Secretary and Secretary to Department.....	1897, May 27.....	3,000 00	
	F. E. Titus.....	Law Clerk.....	1920, Mar. 2.....	3,500 00	
	W. A. Fleming.....	Clerk.....	1914, Apr. 30.....	1,100 00	Resigned January 31, 1921.
	M. E. Bliss.....	Stenographer and Filing Clerk to Deputy Minister.....	1909, Aug. 16.....	1,200 00	
	R. P. Ferguson.....	Clerk and Stenographer.....	1918, Apr. 2.....	1,100 00	
	B. Beley.....	Stenographer.....	1920, Jan. 5.....	1,050 00	Resigned June 15, 1921.
	Eva Harrison.....	do.....	1920, May 14.....	1,050 00	
	B. Lankin.....	Messenger.....	1921, Jan. 14.....	700 00	
	J. J. Murphy.....	Advisory Chief Clerk.....	1872, May 1.....	2,300 00	Superannuated October 31, 1921
	S. Draper.....	Chief Clerk.....	1900, May 1.....	2,400 00	
	H. E. Johnston.....	Clerk of Military Grants.....	1905, Mar. 25.....	1,900 00	Superannuated May 1, 1921.
	W. R. Ledger.....	Principal Clerk.....	1894, Feb. 15.....	2,200 00	
	C. E. Burns.....	do.....	1897, July 29.....	2,200 00	
	W. S. Sutherland.....	Senior Clerk.....	1900, Mar. 18.....	1,900 00	
	J. B. Proctor.....	do.....	1897, Jan. 15.....	1,800 00	
	J. E. Drinkwater.....	do.....	1915, Oct. 19.....	1,700 00	
	F. A. Lucas.....	Clerk.....	1906, Dec. 18.....	1,600 00	
	S. A. Platt.....	do.....	1905, June 12.....	1,600 00	
	C. S. Jones.....	Clerk of Patents.....	1890, May 22.....	2,150 00	
	W. Carrell.....	Engrossing Clerk.....	1899, Dec. 18.....	1,600 00	Superannuated July 1st, 1921.
	A. E. Robillard.....	do.....	1894, May 4.....	1,600 00	Superannuated May 1st, 1921.
	A. E. Roe.....	Clerk of Registers.....	1906, Oct. 16.....	1,700 00	
	F. W. Bindon.....	Clerk.....	1915, Jan. 26.....	1,600 00	
	S. Mulholland.....	do.....	1918, May 6.....	775 00	
	S. Ross.....	Stenographer.....	1917, July 9.....	1,100 00	
	M. Bengough.....	do.....	1896, Oct. 23.....	1,200 00	
	E. F. O'Neil.....	do.....	1902, July 7.....	1,100 00	
	E. G. Halliday.....	do.....	1907, Feb. 21.....	1,100 00	
	B. M. Benson.....	do.....	1909, May 25.....	1,100 00	
	E. Hills.....	do.....	1912, July 2.....	1,100 00	
	E. Singleton.....	do.....	1917, Apr. 16.....	975 00	

Surveys Branch.	L. V. Rorke.....	Director.....	1909, May	1	4,200 00	Superannuated January 1, 1921.
	J. Hutcheon.....	Surveyor and Draughtsman.....	1913, Apr.	1	3,150 00	
	W. F. Lewis.....	Clerk.....	1872, Mar.	1	1,400 00	
	D. G. Boyd.....	Draughtsman.....	1896, Oct.	16	2,200 00	
	E. M. Jarvis.....	Clerk.....	1897, Apr.	25	1,650 00	
	B. Rushford.....	Draughtsman.....	1910, Jan.	24	1,700 00	
	F. E. Blanchet.....	do	1906, May	15	1,700 00	
	A. Leaman.....	do	1907, Sept.	12	1,700 00	
	H. Trechy.....	do	1896, June	25	1,800 00	
	I. Work.....	do	1909, May	18	1,900 00	
	M. H. Kirkland.....	Stenographer.....	1902, July	21	1,100 00	
	C. O'Connor.....	do	1907, Oct.	16	900 00	
	E. C. Armer.....	do	1909, Aug.	6	1,050 00	
Woods and Forests.....	J. A. G. Crozier.....	Advisory Chief Clerk.....	1867, Dec.	1	2,300 00	Superannuated January 1, 1921.
	J. Houser.....	Chief Clerk.....	1905, July	17	2,400 00	
	J. B. Cook.....	Clerk.....	1894, Aug.	7	1,950 00	
	H. Gillard.....	do	1897, Dec.	6	1,900 00	
	W. F. Trivett.....	do	1906, June	25	2,000 00	
	A. H. O'Neil.....	do	1906, July	19	1,600 00	
	R. H. Hodgson.....	do	1903, Oct.	15	1,450 00	
	S. D. Meeking.....	do	1910, Feb.	8	1,400 00	
	E. H. Telfer.....	do	1915, Sept.	27	1,400 00	
	E. H. Squire.....	do	1916, Jan.	4	1,300 00	
	M. C. Rowland.....	Stenographer.....	1912, May	1	1,100 00	
	S. O. Dennis.....	do	1910, Mar.	2	1,100 00	
	J. McCort.....	do	1918, Feb.	28	975 00	
Accounts.....	J. Ferguson.....	do	1919, Aug.	4	850 00	Superannuated June 1, 1921.
	D. G. Ross.....	Accountant.....	1861, Apr.	15	3,000 00	
	H. M. Lount.....	do	1903, Oct.	1	2,550 00	
	C. J. Clarke.....	Clerk.....	1905, Aug.	9	1,600 00	
	R. Gordon.....	do	1912, July	30	1,400 00	
	W. A. Burritt.....	do	1907, Sept.	24	1,600 00	
	C. Bowland.....	Clerk and Stenographer.....	1908, July	9	1,100 00	
	M. A. Whyte.....	do	1921, June	1	900 00	

Appendix No. 1.—*Concluded.*

Return of Officers and Clerks of the Department of Lands and Forests, for the year ending October 31st, 1921.

Branch.	Name.	Designation.	When Appointed.	Salary per annum.	Remarks.
Records Branch.	S. K. Burdin.....	Chief Clerk.....	1916, Apr. 6.....	2,500 00	
	C. Dies.....	Clerk.....	1905, Oct. 2.....	1,500 00	
	F. Samuels.....	do.....	1903, Dec. 5.....	1,500 00	
	C. W. St. John.....	do.....	1906, July 9.....	1,400 00	
	A. Ferguson.....	do.....	1915, Dec. 15.....	1,600 00	
	W. B. Baines.....	do.....	1912, Apr. 9.....	1,400 00	
	J. T. Lee.....	do.....	1917, June 25.....	1,400 60	
	N. Mathewson.....	do.....	1915, May 7.....	1,300 00	
Forestry.....	H. Brophy.....	Mailing Clerk, etc.....	1898, Oct. 1.....	1,300 00	
	E. J. Zavitz.....	Provincial Forester.....	1912, Nov. 7.....	4,500 00	
	C. R. Mills.....	Assistant Provincial Forester.....	1921, Mar. 28.....	3,000 00	
	F. S. Newman.....	Forester.....	1913, Sept. 22.....	2,300 00	
	G. W. Harris.....	Clerk.....	1906, Sept. 1.....	1,500 00	
	N. L. Rogers.....	do.....	1911, Aug. 1.....	1,700 00	
	J. Bald.....	Stenographer.....	1913, June 12.....	1,100 00	
	V. M. Bassford.....	do.....	1920, June 1.....	900 00	
Colonization Roads.....	C. H. Fullerton.....	Superintendent.....	1915, Oct. 15.....	4,400 00	
	M. P. Doherty.....	Accountant and Chief Clerk.....	1898, May 1.....	2,100 00	
	C. H. Meader.....	Surveyor and Draughtsman.....	1912, June 14.....	2,400 00	
	J. H. Bradshaw.....	Clerk.....	1884, June 10.....	1,400 00	Superannuated January 1, 1921.
	A. Gamey.....	do.....	1915, July 19.....	1,200 00	
	P. Godkin.....	Stenographer.....	1917, Aug. 27.....	1,050 00	Resigned, December 31, 1920.

H. M. LOUNT,  
Accountant.W. C. CAIN,  
Deputy Minister of Lands and Forests.

*Appendix No. 2.*  
List of Agents for the year ending October 31st, 1921.

Name.	Post Office Address.	District or County.	Date of Appointment.	Salary per annum.	Remarks.
<i>Land Agents.</i>					
Anderson, T. V.	Hearst.	Part District of Algoma.	1913, May 9	\$ 800 00	Resigned April 30, 1921.
Arthurs, E.	Espanola Mills.	do do	1915, May 7	500 00	
Baker, R. H.	Minden.	Part Victoria.	1907, Oct. 1	350 00	
Bolger, J. W.	New Liskeard.	Lake Temiskaming, District of Nipissing.	1913, July 17	1,200 00	For salary see Homestead Inspectors.
Both, C.	Denbigh.	Part of Frontenac and Addington.	1905, Oct. 20	200 00	
Brown, John	Markstay.	Part of District of Nipissing and Sudbury.	1916, June 27	600 00	
Brown, J. B.	Bracebridge.	Muskoka District.	1905, July 28		
Blank F.	Wilno.	Part District of Renfrew.	1921, Apr. 1	500 00	Resigned July 1, 1921.
Cameron, W.	Saratton Station.	do do	1911, Apr. 27	500 00	
Campbell, I. M.	Parry Sound.	do do	1914, Nov. 12	500 00	
Dean, Thos.	Sault Ste. Marie.	Algoma.	1920, Nov. 18	300 00	
Dempsey, S. J.	Cochrane.	do do	1911, Feb. 9	1,100 00	
Dodds, T.	Thessalon.	do do	1915, May 4	500 00	
Douglas, W. J.	Maynooth.	do Hastings.	1912, June 12	500 00	
Ellis, H. J.	Powassan.	do District of Parry Sound.	1909, May 21	500 00	
Freeborn, Dr. J. S.	Magnetawan.	do do	1905, Nov. 10	500 00	
Gibson, J. E.	Dryden.	do do	1914, Nov. 20	1,000 00	
Ginn, F. E.	Matheson.	Part District of Nipissing.	1912, Mar. 20	1,200 00	
Hales, W.	Aspley.	County of Peterborough.	1911, July 20	250 00	
Hollands C. J.	Fort Frances.	Townplot of Alberta and District of Rainy River.	1892, Oct. 12	300 00	
Holland, H. E.	Kenora.	do District of Rainy River.	1921, Jan. 1	600 00	
McFayden, A.	Emo.	do do	1905, Sept. 8	600 00	
MacLennan, J. K.	Sudbury.	do do	1905, July 3	700 00	
Mills, Jos. E.	Matheson.	do do	1921, Aug. 1	1,200 00	
O'Flaherty, T. F.	Kenora.	do do	1920, May 10	600 00	
O'Donnell, J. L.	Hearst.	do do	1921, May 3	800 00	Also Mining Recorder, Resigned January 1, 1921.
Parsons, W. J.	North Bay.	do do	1908, Apr. 8	1,000 00	
Philion, J. A.	Sturgeon Falls.	do do	1907, Sept. 13	500 00	
Small, R.	Mattawa.	do do	1910, June 30	500 00	
Teasdale, R. A.	Massey.	do do	1917, July 1	600 00	
Thaw, D.	Emsdale.	do do	1919, July 2	500 00	
Watt, F.	Pembroke.	do do	1913, May 28	300 00	
Whybourne, W. E.	Marksville.	do Renfrew.	1905, Apr. 7	300 00	
		do St. Joseph Island.			



## Appendix No. 2—Concluded.

List of Agents for the year ending October 31st, 1920.

Name.	Post Office Address.	District or County.	Date of Appointment.	Salary per annum.	Remarks.
Wilson, A. N.	Kinmount.	Part District of Peterborough.	1915, June 1	\$ 175 00	
Woollings, J.	Englehart.	do do Nipissing.	1908, June 30	800 00	
McArthur, T. A.	North Bay.	Inspector of Crown Lands Offices.	1912, May 1	900 00	Also Inspector of Mining Recorders' Offices.
<i>Homestead Inspectors.</i>					
Barr, J.	Fort Frances.	District of Rainy River.	1906, Nov. 23	1,400 00	
Bastien, J. A.	Chelmsford.	W. Part of Sudbury District.	1913, May 2	1,200 00	
Brown, J. B.	Bracebridge.	Muskoka District.	1905, July 28	1,100 00	Also Crown Lands Agent.
Cragg, W. V.	New Liskeard.	S. Part of Temiskaming District.	1913, Mar. 27	1,400 00	
Dean, T.	Sault Ste. Marie.	Algonia District.	1908, July 29	900 00	Also Crown Lands Agent.
Hughes, T.	Murillo.	Thunder Bay District.	1908, July 20	1,300 00	
Jervis, H. F. J. W.	Callander.	District of Parry Sound.	1920, June 10	1,500 00	
Owens, H. B.	Cache Bay.	E. Part Sudbury and W. Part Algonia Districts.	1918, June 25	1,000 00	
Smith, D.	Cochrane.	N. part of Temiskaming District.	1912, Apr. 16	1,700 00	
Van Horn, L. E.	Monteith.	Part Temiskamin, and Algonia Districts.	1920, Jan. 27	1,500 00	
Watson, T. P.	Englehart.	Centre part of Temiskaming District.	1905, May 10	1,400 00	
Wigle, R. G.	Dryden.	Kenora District.	1914, May 27	1,400 00	
<i>Timber Agents.</i>					
Christie, W. P.	Parry Sound.	Part Parry Sound and Muskoka Districts.	1903, Dec. 4	1,700 00	
Darby, E. J.	Ottawa.	Part Ottawa District.	1889, July 26	1,500 00	Superannuated Jan. 1, 1921.
Hawkins, S. J.	Webbwood.	Part Algonia and Sudbury Districts.	1905, Aug. 16	1,900 00	
Henderson, C.	Sudbury.	do do do	1902, Jan. 1	2,100 00	Superannuated Jan. 1, 1921.
Huckson, A. H.	Sault Ste. Marie.	Part District of Algonia.	1914, Apr. 1	2,100 00	
Jones, W. M.	Fort Frances.	Rainy River District.	1918, Nov. 15	1,700 00	Retired from office, July 1, 1921
Larose, S. C.	Ottawa.	Part Ottawa District.	1890, May 8	1,800 00	
MacDonald, S. C.	New Liskeard.	Part Temiskaming District.	1897, Jan. 1	2,000 00	
Margach, W.	Kenora.	Kenora District.	1889, May 16	1,600 00	Superannuated Jan. 1, 1921.
McDonald, H.	Thessalon.	Part District of Algonia.	1905, Apr. 20	1,500 00	Superannuated Nov. 1, 1921.
McDougall, J. T.	North Bay.	Nipissing and part Sudbury Districts.	1908, July 8	2,100 00	
Oliver, J. A.	Port Arthur.	Thunder Bay District.	1905, Sept. 30	1,850 00	Resigned Oct. 31, 1921.
Spence, D.	Cochrane.	Part Temiskaming and Algonia Districts.	1920, Dec. 1	2,300 00	
Stevenson, A.	Peterborough.	Belleville District.	1905, Oct. 4	1,800 00	
Wood, W. G. A.	South Porcupine.	Porcupine District.	1917, Feb. 28	1,600 00	

H. M. LOUNT,  
Accountant.W. C. CAIN,  
Deputy Minister of Lands and Forests.

*Appendix No. 3.*

Statement of Lands Sold and Leased. Amount of Sales and Leases and Amount of Collections for the year ending October 31st, 1921.

Service.	Acres sold and leased.	Amount of sales and leases.	Collections on sales and leases.
<i>Lands Sold:</i>		\$ c	\$ c
Agricultural and Townsites.....	139,026.86	143,059 02	135,862 27
Clergy Lands.....	12.50	31 25	612 90
Common School Lands.....			3,447 80
Grammar School Lands.....	57.50	28 75	529 84
University Lands.....	836.38	418 25	1,917 67
<i>Lands Leased:</i>			
Crown.....	20,524.85	2,286 50	56,588 93
Temagami.....	21.00	222 50	900 50
	160,479.09	146,046 27	199,859 91

H. M. LOUNT,  
Accountant.

W. C. CAIN,  
Deputy Minister of Lands and Forests.

*Appendix No. 4.*

Statement of Revenue of the Department of Lands and Forests for the year ending  
October 31st, 1921.

Service.	\$ c	\$ c	\$ c
<b>LAND COLLECTIONS.</b>			
<i>Crown Lands:</i>			
Agricultural.....	115,838 91		
Townsites.....	20,023 36	135,862 27	
Clergy Lands.....	612 90		
Common School Lands.....	3,447 80		
Grammar School Lands.....	529 84		
University Lands.....	1,917 67	6,508 21	
			142,370 48
<i>Rent:</i>			
Crown Leases.....		55,017 03	
Algonquin Provincial Park.....		1,450 40	
Temagami Leases.....		900 50	
Sand and Gravel.....		121 50	57,489 43
<b>WOODS AND FORESTS.</b>			
Bonus.....		1,555,770 69	
Timber Dues.....		1,921,356 95	
Ground Rent.....		99,245 12	
Transfer Fees.....		5,810 00	
Fire Protection.....		181,257 72	3,763,440 48
<i>Parks:</i>			
Algonquin Provincial Park.....		14,346 44	
Rondeau Provincial Park.....		1,902 20	
Quetico Provincial Park.....		1,043 21	17,291 85
Casual Fees.....		1,683 63	
Cullers' Fees.....		176 00	
Forest Reserves Guides' Fees.....		161 00	2,020 63
<b>REFUNDS.</b>			
Fire Ranging.....		12,561 46	
Forest Ranging.....		39,438 82	
Colonization Roads Contingencies.....		400 00	
Reforestation.....		325 00	
Agents' Salaries.....		200 00	
Contingencies, Lands.....		160 30	
Travelling Expenses, Lands.....		49 49	53,135 07
			4,035,747 94

H. M. LOUNT,  
Accountant.

W. C. CAIN,  
Deputy Minister of Lands and Forests.

Appendix No. 5.

Statement of Receipts of the Department of Lands and Forests for the year ending October 31st, 1921, which are considered as Special Funds.

Service.	\$	c.	\$	c.
<i>Clergy Lands.</i>				
Principal.....	323	05	612	90
Interest.....	289	85		
<i>Common School Lands.</i>				
Principal.....	1,808	51	3,447	80
Interest.....	1,639	29		
<i>Grammar School Lands.</i>				
Principal.....	333	68	529	84
Interest.....	196	16		
<i>University Lands.</i>				
Principal.....	1,204	68	1,917	67
Interest.....	712	99		
			6,508	21

H. M. LOUNT,  
Accountant.

W. C. CAIN,  
Deputy Minister of Lands and Forests.



*Appendix No. 6.*

Statement of Disbursements of the Department of Lands and Forests for the year ending October 31st, 1921.

Service.	\$	c	\$	c	\$	c
AGENTS' SALARIES AND DISBURSEMENTS.						
<i>Land, \$20,717.00.</i>						
Anderson, T. V.....	400	00				
Disbursements.....	105	50				
			505	50		
O'Donnell, J. L.....	396	89				
Disbursements.....	238	00				
			634	89		
Arthurs, E.....			500	00		
Baker, R. H.....			350	00		
Bolger, J. W.....	1,200	00				
Disbursements.....	181	88				
			1,381	88		
Both, C.....			200	00		
Brown, John.....	600	00				
Disbursements.....	28	89				
			628	89		
Blank, F.....	291	67				
Disbursements.....	5	50				
			297	17		
Cameron, Wm.....	500	00				
Disbursements.....	70	00				
			570	00		
Campbell, Miss I. M.....	500	00				
Disbursements.....	101	00				
			601	00		
Dean, T.....	285	69				
Disbursements.....	177	40				
			463	09		
Dempsey, S. J.....	1,100	00				
Disbursements.....	269	60				
			1,369	60		
Dodds, Thos.....	500	00				
Disbursements.....	10	00				
			510	00		
Douglas, W. J.....			500	00		
Ellis, H. J.....			500	00		
Freeborn, J. S.....	500	00				
Disbursements.....	11	45				
			511	45		
Gibson, J. E.....	1,000	00				
Disbursements.....	194	50				
			1,194	50		
Ginn, F. E.....	800	00				
Mills, J. E.....	300	00				
Disbursements.....	170	25				
			1,270	25		
Hales, W.....	250	00				
Disbursements.....	20	00				
			270	00		
Hollands, C. J.....	300	00				
Disbursements.....	150	00				
			450	00		
<i>Carried forward</i> .....			12,708	22		

*Appendix No. 6—Continued.*

Service.	\$	c.	\$	c.	\$	c.
<i>Brought forward</i> .....			12,708	22		
<i>AGENTS' SALARIES AND DISBURSEMENTS—Continued.</i>						
<i>Land—Concluded.</i>						
O'Flaherty, T. P.....	100	00				
Holland, H. E.....	500	00				
Disbursements.....	406	35				
			1,006	35		
McFayden, A.....	600	00				
Disbursements.....	40	59			640	59
MacLennan, J. K.....	700	00				
Disbursements.....	31	50			731	50
Oliver, J. A., Disbursements.....					442	25
Parsons, W. J.....	1,000	00				
Disbursements.....	205	50			1,205	50
Philion, J. A.....	500	00				
Disbursements.....	27	67			527	67
Small, R.....	500	00				
Disbursements.....	25	25			525	25
Teasdale, R. A.....	600	00				
Disbursements.....	24	22			624	22
Thaw, D.....	500	00				
Disbursements.....	18	95			518	95
Watt, F.....					300	00
Whybourne, W. E.....	300	00				
Disbursements.....	38	50			338	50
Wilson, A. N.....	175	00				
Disbursements.....	8	00			183	00
Woolings, J.....	800	00				
Disbursements.....	165	00			965	00
<i>Homestead Inspectors, \$25,556.58.</i>						
Barr, J. C.....	1,400	00				
Disbursements.....	1,371	14			2,771	14
Bastien, J. A.....	1,200	00				
Disbursements.....	1,029	40			2,229	40
Brown, J. B.....	1,100	00				
Disbursements.....	638	26			1,738	26
Cragg, W. V.....	1,400	00				
Disbursements.....	455	60			1,855	60
<i>Carried forward</i> .....			29,311	40		

*Appendix No. 6—Continued.*

Service.	\$ c.	\$ c.	\$ c.
<i>Brought forward</i> .....		29,311 40	
<b>AGENTS' SALARIES AND DISBURSEMENTS.—Continued.</b>			
<i>Homestead Inspectors.—Concluded.</i>			
Dean, T.....	900 00		
Disbursements.....	267 95		
		1,167 95	
Hughes, Thos.....	1,300 00		
Disbursements.....	963 85		
		2,263 85	
Jervis, H. F. J. W.....	1,500 00		
Disbursements.....	916 60		
		2,416 60	
Owens, H. B.....	1,000 00		
Disbursements.....	1,409 15		
		2,409 15	
Smith, D.....	1,700 00		
Van Horn, L. E.....	1,375 00		
Disbursements.....	1,148 71		
		4,223 71	
Watson, T. P.....	1,400 00		
Disbursements.....	777 65		
		2,177 65	
Wigle, R. G.....	1,400 00		
Disbursements.....	903 27		
		2,303 27	
<i>Timber, \$35,860.70.</i>			
Christie, W. P.....	1,700 00		
Disbursements.....	389 14		
		2,089 14	
Hawkins, S. J.....	1,900 00		
Disbursements.....	138 40		
		2,038 40	
Henderson, C.....	349 50		
Hurdman, G. C.....	692 30		
MacCindle, Miss I.....	640 00		
Disbursements.....	651 54		
		2,333 34	
Huckson, A. H.....	2,100 00		
McDougall, Miss M.....	480 00		
Disbursements.....	1,036 32		
		3,616 32	
Jones, W. M.....	1,133 33		
McDonald, A.....	1,600 00		
Alexander, J. A.....	632 00		
Disbursements.....	889 43		
		4,254 76	
MacDonald, S. C.....	2,000 00		
Disbursements.....	237 34		
		2,237 34	
Margach, Wm.....	265 34		
Legris, J.....	632 68		
Brunsell, Miss E. S.....	752 89		
George, Miss J. R.....	49 00		
Disbursements.....	1,173 51		
		2,873 42	
<i>Carried forward</i> .....		65,716 30	

*Appendix No. 6.—Continued.*

Service.	\$	c.	\$	c.	\$	c.
<i>Brought forward</i> .....			65,716	30		
AGENTS' SALARIES AND DISBURSEMENTS— <i>Concluded.</i>						
<i>Timber.—Concluded.</i>						
McDonald, H.....	1,500	00				
Disbursements.....		284 47				
			1,784	47		
McDougall, J. T.....	2,100	00				
Disbursements.....		564 63				
			2,664	63		
Oliver, J. A.....	1,850	00				
Godfrey, Miss S.....		885 00				
Conners, Miss M.....		18 75				
Disbursements.....		1,065 96				
			3,819	71		
Spence, D. J.....	2,108	33				
Disbursements.....		1,237 07				
			3,345	40		
Stevenson, A.....	1,800	00				
Disbursements.....		487 39				
			2,287	39		
Whelan, P. J., disbursements.....				413 37		
Wood, W. G. A.....	1,600	00				
Disbursements.....		503 01				
			2,103	01		
<i>Miscellaneous, \$2,103.07.</i>						
Cornwall, Fred T., services collecting rentals at Presqu'île Point.....				53 00		
Green, H. P., Caretaker of Islands in Charleston Lake.....				50 00		
Jamieson, W. H., Caretaker of Islands in Dog and Latoria Lakes.....				50 00		
Stuart, Joseph, services as Supervisor of Beach at Wellington.....				50 00		
VanMeer, J. F. inspecting Water Lot front of Twp. Billings.....				17 00		
McArthur, T. A., Inspector of Agencies.....	900	00				
Disbursements.....		983 07				
			1,883	07		
OTTAWA AGENCY.					84,237	35
Darby, E. J., Agent.....				448 50		
LaRose, S. C., Clerk.....				1,176 31		
Rent.....	700	00				
Disbursements.....		81 79				
				781 79		
					2,406	60
CULLERS' ACT.						
McDougall, J. T., disbursements.....				28 25		
Milway, J. H., disbursements.....				11 00		
					39	25
<i>Carried forward</i> .....					86,683	20



*Appendix No. 6.—Continued.*

Service.	\$	c.	\$	c.	\$	c.
<i>Brought forward</i> .....					86,683	20
FIRE RANGING.....					547,474	47
FOREST RANGING.....					339,428	11
FOREST RESERVES.....					5,277	84
REFORESTATION.....					83,372	63
ALGONQUIN PROVINCIAL PARK.....					40,705	81
QUETICO PROVINCIAL PARK.....					13,606	37
RONDEAU PROVINCIAL PARK.....					15,295	90
SURVEYS.....					145,169	99
COLONIZATION ROADS.....					506,180	80
BOARD OF SURVEYORS.....					200	00
GRANT TO CANADIAN FORESTRY ASSOCIATION.....					1,000	00
ANNUAL MEMBERSHIP FEES.....					66	69
INSURANCE.....					1,037	46
COMMISSIONS RE SUNDAY INVESTIGATIONS.....					63,781	05
WORKMEN'S COMPENSATION.....					3,042	76
UNFORESEEN AND UNPROVIDED.....					389	45
SPECIAL WARRANTS.						
Legal Fees and Expenses.....			45,147	67		
Canadian Aero Film Company.....			6,499	75		
Hurdman, G. C.....			5,984	75		
Toronto Exhibition.....			396	60		
Doherty, L. J.....			150	00		
					58,178	77
MISCELLANEOUS.						
Whitson, Mrs. A. M.....	Gratuity		4,500	00		
Law Society of Upper Canada.....	Fees		20	00		
					4,520	00
REFUNDS (Miscellaneous).....					16,656	31
SPECIAL SURVEY, ONTARIO AND MANITOBA BOUNDARY LINE.....					12,500	00
VETERANS' COMMUTATION.....					100	00
CLEARING FIRE HAZARDS.....					9,744	81
CLEARING LANDS, KAPUSKASING.....					5,042	00
<i>Carried forward</i> .....					1,959,454	42

*Appendix No. 6.—Continued.*

Service.	\$	c.	\$	c.	\$	c.
<i>Brought forward</i> .....					1,959,454	42
CONTINGENCIES, PLANS, MAPS, ETC.						
<i>Departmental.</i>						
Printing and Binding.....	1,409	76				
Stationery.....	17,092	63				
			18,502	39		
Express.....	671	32				
Postage.....	2,536	61				
			3,207	93		
Telegraphing.....	892	01				
Car Fare.....	49	00				
			941	01		
Subscriptions.....	251	47				
Advertising.....	15,317	83			15,569	30
					364	45
Typewriter repairs and inspections.....						
Extra Clerks.....	9,597	78				
Maps.....	7,482	40				
Sundries.....	337	39				
			17,417	57		
					56,002	65
<i>Travelling Expenses.</i>						
Bowman, Hon. Beniah.....			827	65		
Grigg, A.....			200	00		
Cain, W. C.....			157	57		
Niven, F. J.....			229	55		
Titus, F. E.....			136	06		
Rorke, L. V.....			846	86		
Work, J.....			132	10		
Boyd, D. G.....			39	45		
Hutcheon, J.....			621	60		
Ledger, W. R.....			31	80		
Larose, S. C.....			170	00		
Stevenson, A.....			111	85		
					3,504	49
TYPEWRITERS AND OFFICE EQUIPMENT.						
United Typewriter Company.....					792	14
<i>Forestry Contingencies.</i>						
Printing and Binding.....	236	47				
Stationery.....	1,184	97				
			1,421	44		
Postage.....	386	11				
Telegraphing.....	204	02				
Express and Cartage.....	89	13				
Typewriter Inspections and Repairs.....	33	50				
			712	76		
Extra Clerks.....	1,883	66				
Supplies.....	135	16				
Sundries.....	42	50				
			2,061	32		
					4,195	52
<i>Carried forward</i> .....					2,023,949	22

*Appendix No. 6.—Concluded.*

Service.	\$	c.	\$	c.	\$	c.
<i>Brought forward.....</i>					2,023,949	22
<i>Travelling Expenses.</i>						
Zavitz, E. J.....			57	00		
Mills, C. R.....			24	10		
					81	10
TYPEWRITERS, OFFICE EQUIPMENT, ETC.						
United Typewriter Company.....					350	00
COLONIZATION ROADS CONTINGENCIES.						
Printing and Binding.....	296	63				
Stationery.....	1,245	67				
			1,542	30		
Postage.....	4	40				
Express.....		90				
			5	30		
Telegraphing.....	84	57				
Subscriptions.....	18	53				
Typewriter repairs and inspections.....	69	50				
			172	60		
Extra Clerks.....	2,556	16				
Sundries.....	66	25				
			2,622	41		
					4,342	61
<i>Travelling Expenses.</i>						
Meador, Chas. H.....					802	39
					2,029,525	32

\*For particulars of expenditure of the Northern Development Branch see Appendix No. 46.

H. M. LOUNT,  
Accountant.

W. C. CAIN,  
Deputy Minister of Lands and Forests.





## Appendix

## WOODS AND

## Statement of Timber and Amounts accrued from Timber Dues, Ground

## QUANTITY AND

Agencies.	Area covered by timber licenses.	Saw logs.				
		Pine.		Other.		Pieces.
	Square Miles.	Pieces.	Feet B.M.	Pieces.	Feet B.M.	
Western Timber District.....	15,401 $\frac{3}{4}$	9,395,767	309,648,918	1,333,596	47,626,991	45,961
Belleville Timber District.....	562 $\frac{3}{4}$	94,849	1,551,178	128,117	4,338,986	1,126
Ottawa Timber District.....	3,891	403,347	18,727,034	504,479	14,845,243	2,483
	19,855 $\frac{1}{2}$	9,893,963	329,927,130	1,966,192	66,811,220	49,570

## General Statement

Agencies.	Tan Bark.	Railway Ties.	Shingle Bolts.	Cedar Posts.	Telegraph Poles.	Pulp-wood.		
	Cords.	Pieces.	Cords.	Pieces.	Pieces.	Cords.	Transfer Fees.	Interest.
Western Timber District.....	917	3,987,812	2,503	70,650	15,618	900,845	3,345 00	32,338 24
Belleville Timber District..	16	4,224	.....	104	35	169	85 00	157 30
Ottawa Timber District.....	1,224	9,435	.....	14,555	3,093	27,171	2,380 00	626 14
	2,157	4,001,471	2,503	85,309	18,746	928,185	5,810 00	33,121 68

JOHN HOUSER,  
Chief Clerk in Charge.

No. 7.

## FORESTS.

Rent and Bonus during the year ending 31st October, 1921.

## DESCRIPTION OF TIMBER.

Boom and Dimension.			Square Timber.		Piling.				Cordwood.	
Pine.	Other.								Hard.	Soft.
Feet B.M.	Pieces.	Feet B.M.	Pieces.	Cubic Feet.	Pieces.	Lineal Feet.	Pieces.	Feet B.M.	Cords.	Cords.
5,621,498	26,151	2,956,905	1,425	83,066	1,645	48,187	4,448	438,412	5,103	33,461
143,334	1,717	175,899								
268,733	3,894	448,211	.....	.....	.....	.....	.....	.....	81	3,444
6,033,565	31,762	3,581,015	1,425	83,066	1,645	48,187	4,448	438,412	5,184	36,905

of Timber.—Concluded.

Amounts accrued.

Trespass.	Timber Dues.	Bonus.	Deposit Timber Sales.	Ground Rent.	Fire Protection.	Total.
\$ 66,391 32	\$ 2,057,830 24	\$ 1,466,358 10	\$ 248,150 40	\$ 73,332 00	\$ 148,495 27	\$ 4,096,240 57
677 89	10,798 49	423 90	200 00	3,055 00	3,641 80	19,039 38
2,787 21	93,000 58	.....	.....	22,420 00	29,120 65	150,334 58
69,856 42	2,161,629 31	1,466,782 00	248,350 40	98,807 00	181,257 72	4,265,614 53

W. C. CAIN,  
Deputy Minister

*Appendix No. 8.*

## PATENTS OFFICE (Lands Branch).

Statement of Patents, etc., issued from 1st November, 1920, to 31st October, 1921.

Public Lands (late Crown).....	523
“ “ (late School).....	15
“ “ (late Clergy Reserves).....	3
“ “ (University).....	3
Free Grant Lands (Act of 1913).....	372
“ “ “ (Act of 1901) Veterans.....	48
Mining Lands (Patents).....	285
Mining Leases.....	170
Crown Leases.....	26
Licenses of Occupation.....	92
Temagami Island Leases.....	5
Sand and Gravel Licenses.....	21
Pine Patents.....	8
Quarry Claims.....	15
Orders-in-Council.....	1
Total.....	1,587

CHAS. E. BURNS,  
Clerk of Patents.W. C. CAIN,  
Deputy Minister of Lands and Forests.

*Appendix No. 9.*

## WOODS AND FORESTS BRANCH.

Statement of Revenue collected during the year ending October 31st, 1921.

Amount of Western Collections at Department.....	\$3,612,395 59
“ Belleville “ “ “ .....	20,162 02
“ Ottawa “ “ “ .....	130,882 80
	<hr/>
	\$ 3,763,440 48

## WOODS AND FORESTS.

Bonus.....	1,555,770 69
Timber Dues.....	1,921,356 95
Ground Rent.....	99,245 12
Transfer Fees.....	5,810 00
Fire Protection.....	181,257 72
	<hr/>
	\$ 3,763,440 48

## TIMBER DUES—AMOUNTS ACCRUED—1920-21.

Western.....	\$ 3,590,579 66
Belleville.....	11,900 28
Ottawa.....	95,787 79
	<hr/>
	\$ 3,698,267 73

## WOODS AND FORESTS BRANCH REVENUE.

October 31st, 1921.

## WESTERN DISTRICT—

Timber dues.....	\$ 1,799,838 55
Bonus.....	1,306,896 13
Ground rent.....	73,332 00
Interest on dues.....	31,984 72
Interest on ground rent.....	353 52
Transfer fees.....	3,345 00
Timber sale deposit.....	248,150 40
Fire protection.....	148,495 27
	<hr/>
	\$ 3,612,395 59

## OTTAWA DISTRICT—

Timber dues.....	76,336 01
Ground rent.....	22,420 00
Interest on dues.....	544 24
Interest on ground rent.....	81 90
Fire protection.....	29,120 65
Transfer fees.....	2,380 00
	<hr/>
	\$ 130,882 80

## BELLEVILLE DISTRICT—

Timber dues.....	12,498 83
Bonus.....	524 16
Ground rent.....	3,055 00
Interest on dues.....	154 60
Interest on ground rent.....	2 70
Fire protection.....	3,641 80
Transfer fees.....	85 00
Timber sale deposit.....	200 00
	<hr/>
	20,162 09
	<hr/>
	\$ 3,763,440 48

H. M. LOUNT,  
AccountantJ. H. HOUSER,  
Chief Clerk in Charge.W. C. CAIN,  
Deputy Minister.



*Appendix No. 10.*

Memorandum of parties who passed the Cullers' Examination in 1921.

Barker, Gilbert G., Moore Block, Port Arthur, examined at Port Arthur on the 28th day of September, 1921, licensed November 10th, 1921.

Coghlan, John, 201 Bethune St., Fort William, examined at Port Arthur on the 28th day of September, 1921, licensed November 10th, 1921.

Gilmour, William, Braeside, examined at Callander on the 28th day of September, 1921, licensed October 7th, 1921.

King, Douglas, Cumberland Hotel, Port Arthur, examined at Port Arthur on the 28th day of September, 1921, licensed November 10th, 1921.

Kerr, John, Shanley Block, Port Arthur, examined at Port Arthur on the 28th day of September, 1921, licensed November 10th, 1921.

McKinnon, Charles J., 108 Regent St., Port Arthur, examined at Port Arthur on the 28th day of September, 1921, licensed November 10th, 1921.

Watson, Alexander, 336 Conyers St., Port Arthur, examined at Port Arthur on the 28th day of September, 1921, licensed November 10th, 1921.

JOHN HOUSER,  
Chief Clerk,

W. C. CAIN,  
Deputy Minister.

*Appendix No. II.*

Statement of the work done in Military Office, Lands Branch of the Department of Lands and Forests, during the year ending October 31st, 1921.

Veteran Patents issued.....	48
Locations under Military Certificates.....	27
Certificates applied in payment of lands.....	2
Certificates surrendered for commutation money.....	2

J. B. PROCTOR,  
Clerk in charge.  
  
SELBY DRAPER,  
Chief Clerk.

W. C. CAIN,  
Deputy Minister.

*Appendix No. 12.*

## RECORDS BRANCH, 1920-1921.

*Communications received:*

From Crown Lands Agents.....	10,485
“ Crown Timber Agents.....	5,370
“ Mining Recorders.....	2,486
“ Homestead Inspectors.....	3,558
“ Superintendent Algonquin Park.....	297
“ Superintendent Quetico Park.....	138
“ Superintendent Rondeau Park.....	141
Orders-in-Council.....	200
Telegrams.....	200
Northern Development Branch (figures supplied by them).....	8,753
Loan Commissioner (figures supplied by them).....	5,555
Forestry Branch (figures supplied by them).....	16,136
Colonization Roads (figures supplied by them).....	11,678
All other sources.....	30,258
Total incoming (Minister's Office not included).....	95,255

*Communications sent out:*

To Crown Lands Agents, Inspectors and Park Superintendents.....	23,732
“ General Public.....	23,268
Circular Letters <i>re</i> timber sales.....	6,832
Maps and Blue Prints.....	5,475
Northern Development Branch Letters (figures supplied by them).....	10,712
“ “ Branch, Seed Grain (figures supplied by them).....	652
Loan Commissioner Letters (figures supplied by them).....	8,676
Forestry Branch, Letters (figures supplied by them).....	7,694
“ “ Parcels by post (figures supplied by them).....	483
“ “ Calendars (figures supplied by them).....	10,000
Colonization Roads, Letters (figures supplied by them).....	6,311
Total outgoing (Minister's Office not included).....	103,925

*Postage:*

Postage for the year, Records Branch.....	\$2,403.04
“ “ “ Loan Commissioner.....	300.00
“ “ “ Forestry Branch.....	250.00
“ “ “ Colonization Roads.....	205.00

*Files:*

New Files issued, General.....	6,163
“ “ “ Accounts chargeable.....	685
“ “ “ Accounts free.....	253

S. K. BURDIN,  
Chief Clerk, Records Branch.

W. C. CAIN,  
Deputy Minister.

## Appendix No. 13.

Statement showing the number of Locatees and of acres located; of purchasers and of acres sold; of lots resumed for non-performance of the settlement duties; and of patents issued in Free Grant Townships during the year ending 31st October, 1921.

Township.	District or County.	Agent.	No. of persons located.	No. of acres located.	No. of purchasers.	No. of acres sold.	No. of persons cancelled.	No. of acres resumed.	No. of patents issued.	No. of acres. patented.
Baxter.....	Muskoka.....	J. B. Brown,					3	28 $\frac{3}{4}$	6	52 $\frac{3}{4}$
Brunel.....	"	Bracebridge..	2	199			3	300	1	100
Cardwell.....	"	"					1	50	1	200
Chaffey.....	"	"							4	402
Draper.....	"	"								
Franklin.....	"	"	1	104			1	104	2	342
Freeman.....	"	"	1	195	1	49			2	49 $\frac{1}{2}$
Macaulay.....	"	"	2	300			3	404		
Medora.....	"	"			2	3/5	1	200	6	108 $\frac{1}{2}$
Monck.....	"	"								
Morrison.....	"	"	2	300			1	200	2	200
Muskoka.....	"	"	2	300			3	337		
McLean.....	"	"							1	101
Oakley.....	"	"	4	504			7	863		
Ridout.....	"	"	2	140			1	140	1	2 $\frac{1}{2}$
Ryde.....	"	"	1	180			4	681	3	400
Sherborne.....	Haliburton...	"					1	90		
Sinclair.....	Muskoka.....	"	1	100			1	100	6	642 $\frac{1}{2}$
Stephenson.....	"	"								
Stisted.....	"	"	1	77			1	77	1	104
Watt.....	"	"								
Wood.....	"	"	1	151	1	47	3	314	1	192 $\frac{3}{4}$
Blair.....	Parry Sound..	Miss I. M. Camp-							5	59
Burpee.....	"	bell, Parry Sound.					1	99	2	297 $\frac{3}{4}$
Carling.....	"	"	3	485			3	386	5	415
Christie.....	"	"	3	384			3	582	1	188
Conger.....	"	"					1	166	2	60 $\frac{1}{2}$
Cowper.....	"	"							9	69
Foley.....	"	"								
Ferguson.....	"	"	1	135			2	400	1	200
Hagerman.....	"	"	1	98 $\frac{1}{2}$			1	200		
Harrison.....	"	"			1	2			15	128
Henvey.....	"	"	3	400			1	200		
Humphrey.....	"	"			1	93	2	283	1	181
McConkey.....	"	"	4	541			1	200	2	397
McDougall.....	"	"	1	100			1	191		
McKellar.....	"	"	3	300						
McKenzie.....	"	"			1	45	1	45	4	87
Monteith.....	"	"	2	267			5	683	2	649
Shawanaga.....	"	"							1	10 $\frac{1}{2}$
Wilson.....	"	"	6	900			2	300	2	345
Chapman.....	Parry Sound..	Dr. J. S. Freeborn,	2	382	1	100	3	364	2	400
Croft.....	"	Magnetawan..	7	700			4	500	1	100
Ferrie.....	"	"	1	100			1	100		
Gurd.....	"	"	2	314					1	100
Lount.....	"	"	2	387			4	589		
Machar.....	"	"	2	198			1	99	1	140
Mills.....	"	"	7	1,296	1	25	1	290	2	107
Pringle.....	"	"	7	880			4	582	1	200
Ryerson.....	"	"	2	300			2	300	1	200
Spence.....	"	"	7	853	1	50 $\frac{1}{2}$	6	703	2	400
Strong.....	"	"	1	100						

## Appendix No. 13—Continued

Township	District or County	Agent	No. of persons located	No. of acres located	No. of purchasers.	No. of acres sold	No. of persons cancelled	No. of acres resumed	No. of patents issued	No. of acres patented
Armour.....	Parry Sound..	David Thaw,	1	100			1	103	2	193
Bethune.....	"	Emsdale..	2	200			3	594	1	58
Joly.....	"	"	15	2,127			7	1,004	5	722
McMurrich....	"	"	1	103			3	404		
Perry.....	"	"								
Proudfoot.....	"	"							1	113
Hardy.....	Parry Sound..	H. J. Ellis,	9	1,732	1	2	2	300	1	200
Himsworth.....	"	Powassan..	5	599			6	600	1	32
Laurier.....	"	"	3	254	1	5	1	100	3	296 <sup>3</sup> / <sub>100</sub>
Nipissing.....	"	"	1	100			1	200	2	200
Patterson.....	"	"							2	6
Bonfield.....	Nipissing.....	W. J. Parsons,	13	1,822	2	24 <sup>1</sup> / <sub>2</sub>	7	797	3	402 <sup>1</sup> / <sub>2</sub>
Boulter.....	"	North Bay..	4	504	1	2			1	201
Chisholm.....	"	"	4	581			1	203	3	394
Ferris.....	"	"	4	400	1	50	7	686	6	599
Anson.....	Haliburton...	R. H. Baker,	1	96			1	96	1	100
Glamorgan....	"	Minden..	2	167	1	90	1	99	1	3
Hindon.....	"	"								
Lutterworth....	"	"							1	85
Minden.....	"	"					1	88	3	294
Snowdon.....	"	"	1	136			1	100	3	486
Stanhope.....	"	"	1	98			1	20	2	200
Anstruther....	Peterborough..	William Hales,	1	137			3	507		
Burleigh, N.D..	"	Apsley..	3	298						
" S.D.....	"	"								
Chandos.....	"	"	3	307			2	200	2	100
Methuen.....	"	"					1	125		
Cardiff.....	Haliburton...	A. N. Wilson,	1	200			2	371	2	105
Cavendish.....	Peterborough..	Kinmount..	2	190	1	4	1	88	4	119 <sup>30</sup> / <sub>100</sub>
Galway.....	"	"	5	572			5	533	2	203
Monmouth.....	Haliburton...	"	3	292			5	586	4	497
Bangor.....	Hastings.....	W. J. Douglas,	2	230			3	294	1	101
Carlow.....	"	Maynooth..	1	88					3	448
Cashel.....	"	"							1	100
Dunganoo.....	"	"					2	286	2	312
Faraday.....	"	"	7	879			7	782	3	396 <sup>1</sup> / <sub>2</sub>
Herschel.....	"	"	6	650			6	750	1	100
Limerick.....	"	"			1	59	1	95		
Mayo.....	"	"	5	369			2	249	1	194
Monteagle.....	"	"	1	52	2	101			2	251 <sup>1</sup> / <sub>2</sub>
McClure.....	"	"							3	222 <sup>1</sup> / <sub>2</sub>
Wicklow.....	"	"	2	100			1	95	3	571
Wollaston.....	"	"	2	200					1	100
Algona, S.....	Renfrew.....	Frank Blank,					1	100	1	100
Brougham.....	"	Wilno..					1	91		
Brudenell.....	"	"					2	228	3	287
Burns.....	"	"					1	100	1	182
Grattan.....	"	"							2	402
Griffith.....	"	"							1	100
Hagarty.....	"	"	1	79			1	100		
Jones.....	"	"	4	346 <sup>1</sup> / <sub>2</sub>			1	182	1	49
Lyell.....	"	"	2	100			1	200	1	7
Lyndoch.....	"	"	6	607			1	50 <sup>1</sup> / <sub>2</sub>	6	798 <sup>1</sup> / <sub>2</sub>



## Appendix No. 13—Continued

Township	District or County	Agent	No. of persons located	No. of acres located	No. of purchasers	No. of acres sold	No. of persons cancelled	No. of acres resumed	No. of patents issued	No. of acres patented
Matawatchesan	Parry Sound	Frank Blank, Wilno	3	313			2	230	5	1,766
Radcliffe	"	"	6	932			5	671	1	100
Raglan	"	"	5	598	1	48	2	251	4	380
Richards	"	"	6	555			6	663	2	67
Sebastopol	"	"							3	381
Sherwood	"	"	7	892	1	100	7	765	2	250
Algona, N.	Renfrew	Finlay Watt,	2	309			1	100	2	309 $\frac{1}{2}$
Alice	"	Pembroke							3	186
Buchanan	"	"	2	331			2	368	9	1,490
Clara	"	"	2	257			1	257	1	181
Fraser	"	"	1	100						
Head	"	"							1	100
Maria	"	"								
McKay	"	"								
Petawawa	"	"							2	148 $\frac{3}{4}$
Rolph	"	"							1	56
Wilberforce	"	"			1	100	1	100	1	100
Wylie (pt.)	"	"							1	98 $\frac{3}{4}$
Calvin	Nipissing	Robert Small,	1	100			1	100	1	200
Cameron (pt.)	"	Mattawa	6	602			2	202	1	135
Lauder	"	"	3	520			2	310	1	2
Mattawan	"	"	8	978			4	487	1	101
Papineau	"	"	11	1,250			7	800	1	100
Korah	Algoma	Thos. Dean,	1	80					1	80
Parke	"	Sault Ste. Marie								
Prince	"	"					1	160	3	480
Aberdeen	Algoma	Thos. Dodds,				1 161	1	163 $\frac{3}{4}$	3	329 $\frac{1}{2}$
" ad.	"	Thessalon	3	319 $\frac{1}{2}$			2	320		
Galbraith	"	"	2	305 $\frac{1}{2}$			2	305 $\frac{1}{2}$	2	198
Lefroy	"	"			1	33				
Plummer	"	"								
" ad.	"	"								
St. Joseph Is'd.	Algoma	W. E. Whybourne,	8	778			7	778	1	99
St. Joseph Channel Is'd.	"	Marksville			1	10			1	10
Baldwin	Sudbury	Edward Arthurs,	6	964 $\frac{1}{2}$			6	971 $\frac{1}{2}$		
Merritt	"	Espanola	13	1,747 $\frac{1}{2}$			2	322	6	310 $\frac{1}{2}$
Blake	Thunder Bay	J. A. Oliver (acting)	10	1,600			10	1,546	2	240
Conmee	"	Port Arthur	5	503	1	1	12	1,612 $\frac{1}{2}$	11	1,655 $\frac{1}{4}$
Crooks	"	"	2	318			5	763	10	1,381
Dawson Road	"	"	6	562	1	1	15	1,688	4	167 $\frac{1}{2}$
Dorion	"	"	1	160			2	277 $\frac{3}{4}$	3	487 $\frac{1}{2}$
Gillies	"	"	1	79			2	159	2	241
Gorham	"	"	8	1,312 $\frac{1}{2}$	3	255	7	1,109	18	2,770 $\frac{1}{4}$
Lybster	"	"	3	240	1	166	1	160 $\frac{1}{2}$	7	837 $\frac{1}{2}$
Marks	"	"	4	624 $\frac{1}{2}$			2	300	2	317 $\frac{1}{2}$
McGregor	"	"	3	482			6	1,079	4	838
McIntyre	"	"								
O'Connor	"	"	2	323			1	161	4	740 $\frac{1}{2}$
Oliver	"	"	2	318			4	640	2	267 $\frac{1}{2}$
Paipoonge, N.R.	"	"							1	90
" S.R.	"	"							1	100
Pardee	"	"	3	502	1	39 $\frac{1}{4}$	3	400		
Pearson	"	"	9	1,365 $\frac{1}{2}$			24	3,745 $\frac{1}{2}$	5	821 $\frac{1}{2}$

## Appendix No. 13—Continued

Township	District or County	Agent	No. of persons located	No. of acres located	No. of purchasers	No. of acres sold	No. of persons cancelled	No. of acres resumed	No. of patents issued	No. of acres patented
Scoble	Thunder Bay	J.A.Oliver, (acting)	9	1,447 $\frac{1}{2}$	1	77 $\frac{1}{2}$	17	2,607 $\frac{1}{2}$	5	771
Stirling	"	Port Arthur	24	3,246 $\frac{1}{4}$	4	381 $\frac{1}{4}$	17	2,279	2	231 $\frac{3}{4}$
Strange	"	"	1	163	1	149	1	159	2	320
Ware	"	"	11	1,588	4	447 $\frac{1}{4}$	10	1,398	17	2,499 $\frac{1}{2}$
Atwood	Rainy River	Wm. Cameron,								
Blue	"	Stratton	10	1,087 $\frac{1}{2}$			10	1,334	3	366 $\frac{1}{2}$
Curran	"	"	2	322			2	322		
Dewart	"	"	15	2,098 $\frac{3}{4}$			10	1,567 $\frac{1}{2}$		
Dilke	"	"	1	80			1	80	2	320
Morley	"	"	2	244 $\frac{1}{2}$	1	4	3	324 $\frac{1}{2}$		
Morson	"	"	11	1,564 $\frac{1}{2}$	4	352	19	2,865 $\frac{1}{2}$		
McCrosson	"	"	6	597 $\frac{1}{4}$	1	80	7	989		
Nelles	"	"	10	1,419 $\frac{1}{2}$			17	2,261 $\frac{1}{2}$	2	162
Patullo	"	"	11	1,527	1	2	13	1,694	4	566
Pratt	"	"	2	283			2	339 $\frac{1}{2}$	2	339 $\frac{1}{2}$
Roseberry	"	"								
Shenston	"	"	1	160			2	241	1	127
Sifton	"	"	10	1,556 $\frac{1}{2}$	2	160	9	1,574	3	319 $\frac{1}{2}$
Spohn	"	"	6	785			11	1,427 $\frac{1}{2}$	2	158 $\frac{1}{2}$
Sutherland	"	"	14	2,188 $\frac{3}{4}$	1	39 $\frac{3}{4}$	12	1,878 $\frac{1}{2}$	2	248 $\frac{1}{2}$
Tait	"	"	6	629	3	243	7	881	4	545
Tovell	"	"	4	657	2	199	3	480	1	78 $\frac{1}{4}$
Worthington	"	"								
Aylesworth	Rainy River	Alex. McFayden,					1	81		
Barwick	"	Emo								
Burriss	"	"	1	200 $\frac{1}{2}$			1	200 $\frac{1}{2}$	4	670 $\frac{1}{2}$
Carpenter	"	"	3	534			4	555 $\frac{1}{2}$	2	318 $\frac{1}{2}$
Crozier	"	"	1	40 $\frac{1}{2}$			3	362		
Dance	"	"	4	676			3	515	1	159 $\frac{1}{2}$
Devlin	"	"	1	162			1	164	3	368 $\frac{1}{2}$
Dobie	"	"	3	409 $\frac{1}{2}$			1	160 $\frac{1}{2}$	4	580
Fleming	"	"	2	320 $\frac{1}{2}$			1	160		
Kingsford	"	"	9	1,380 $\frac{1}{2}$			11	1,673	4	583
Lash	"	"	3	285			2	204	1	160
Mather	"	"	3	414 $\frac{1}{2}$			1	159	4	664
Miscampbell	"	"							1	159 $\frac{1}{2}$
Potts	"	"	4	596			5	757 $\frac{1}{2}$	1	120
Richardson	"	"	1	160 $\frac{1}{2}$	1	88	2	356	2	367
Roddick	"	"								
Woodyatt	"	"							5	704
Aubrey	Kenora	J. E. Gibson,	21	2,888 $\frac{1}{2}$			10	1,341 $\frac{1}{2}$	5	537 $\frac{1}{4}$
Britton	"	Dryden	7	1,023			2	225	1	160
Eton	"	"	25	3,907 $\frac{1}{2}$	1	80	7	989 $\frac{1}{2}$	1	157
Langton	"	"	1	160			3	485	1	3
Melgund	"	"	12	1,750 $\frac{1}{2}$	1	167 $\frac{1}{2}$	7	836	2	312 $\frac{1}{2}$
Mutrie	"	"	4	541 $\frac{1}{2}$			4	603		
Redvers	"	"	2	283 $\frac{1}{2}$			3	437	2	429 $\frac{3}{4}$
Rowell	"	"	2	195					1	120
Rugby	"	"	16	2,559			6	880		
Sanford	"	"	27	4,184 $\frac{1}{2}$			9	1,435 $\frac{1}{2}$	7	1,039 $\frac{1}{2}$
Southworth	"	"	8	1,200			2	293		
Temple	"	"	5	704			3	444	1	160
Van Horne	"	"					1	116	3	543 $\frac{1}{4}$
Wabigoon	"	"	18	2,482 $\frac{3}{4}$			9	1,385	1	67 $\frac{1}{2}$
Wainwright	"	"	8	1,037 $\frac{1}{2}$	1	27	4	554 $\frac{3}{4}$	3	272
Zealand	"	"	19	2,461 $\frac{1}{4}$	1	76	20	3,019	1	162

## Appendix No. 13—Continued

Township	District or County	Agent	No. of persons located	No. of acres located	No. of purchasers	No. of acres sold	No. of persons cancelled	No. of acres resumed	No. of patents issued	No. of acres patented
Melick.....	Kenora.....	H. E. Holland,	24	3,859	1	80	5	824	1	70
Pellatt.....	"	Kenora...	6	964			4	481 $\frac{1}{2}$	4	479
Balfour.....	Sudbury.....	J. K. MacLennan,								
Bleazard.....	"	Sudbury..	2	323					2	154 $\frac{3}{4}$
Broder.....	"	"					1	149		
Capreol.....	"	"	3	394 $\frac{3}{4}$			6	794 $\frac{3}{4}$	1	40
Chapleau.....	"	"							1	685
Dill.....	"	"	3	471 $\frac{1}{2}$			2	293	2	235 $\frac{1}{2}$
Garson.....	"	"					1	150	1	162
Hanmer.....	"	"	5	624 $\frac{1}{2}$			4	598 $\frac{3}{4}$		
Lumsden.....	"	"	2	319 $\frac{1}{2}$			1	160	1	80
Morgan.....	"	"	1	74 $\frac{1}{2}$					2	154 $\frac{3}{4}$
Neelon.....	"	"							2	180 $\frac{1}{10}$
Rayside.....	"	"	1	160				1 160	1	160
Appelby.....	Sudbury.....	John Brown,	12	1,789 $\frac{1}{2}$			5	721	3	404
Casimir.....	"	Markstay..	5	738			2	318 $\frac{1}{2}$	1	159 $\frac{1}{2}$
Dunnet.....	"	"	4	641			1	160	4	606 $\frac{1}{2}$
Hagar.....	"	"	24	3,713 $\frac{1}{2}$			13	1,989		
Jennings.....	"	"	5	717			2	315	1	161 $\frac{1}{2}$
Kirkpatrick.....	"	"	1	157 $\frac{1}{2}$					2	234 $\frac{1}{2}$
Ratter.....	"	"	5	789			3	448 $\frac{1}{2}$	1	105
Caldwell.....	Nipissing.....	J. A. Phillion,	2	424 $\frac{1}{2}$			3	637	4	544 $\frac{1}{2}$
Cosby.....	"	Sturgeon Falls..	4	593					1	160
Grant.....	"	"	3	396 $\frac{1}{2}$			1	76 $\frac{1}{2}$		
Macpherson.....	"	"	3	454			1	160		
Martland.....	"	"	5	663			4	597 $\frac{1}{2}$	5	716 $\frac{1}{2}$
Springer.....	"	"	1	160			2	406	3	275
Abinger.....	Lennox and Addington..	Charles Both,	2	176			3	400		
Canonto, S....	Frontenac....	Denbigh..	1	73						
" N.....	"	"	1	40						
Clarendon.....	"	"					1	105	1	100
Denbigh.....	Lennox and Addington..	"	2	189						
Miller (pt.)....	"	"	2	184					1	100
Palmerston....	"	"							2	317
McClintock...	Haliburton...	Unattached								
Airy.....	Nipissing.....	"	4	398			1	92	2	507 $\frac{1}{2}$
Finlayson.....	"	"			1	48			2	48 $\frac{1}{2}$
Murchison.....	"	"	1	46					1	267
Sabine.....	"	"	2	194			1	100	5	692
O'Brien.....	Temiskaming..	"			52	4,652	54	4,865		
Owens.....	"	"			14	1,185	4	290		
Williamson.....	"	"								
			868	118,637 $\frac{3}{4}$	132	10202 $\frac{1}{10}$	761	102,913 $\frac{1}{4}$	500	60,180 $\frac{3}{10}$

No. of lots assigned..... 253

No. of acres assigned..... 33,324 $\frac{1}{4}$

List showing number of locations by Returned Soldiers in Sale and Free Grant Territory, respectively, and number where arrears due Crown were remitted.

District.	Agency.	Number locations.	No. of arrears remitted.	Total
IN SALE TERRITORY.				
Algoma.....	Hearst.....	58	1	
".....	Unattached.....	1	..	
Temiskaming.....	Englehart.....	21	8	
".....	Cochrane.....	107	..	
".....	Elk Lake.....	1	..	
".....	Haileybury.....	1	..	
".....	Matheson.....	34	..	
".....	New Liskeard.....	3	..	
".....	Hearst.....	2	..	
".....	Unattached.....	5	..	
Sudbury.....	Massey.....	10	1	
".....	Unattached.....	1	..	
Nipissing.....	North Bay.....	3	..	
		<u>247</u>	<u>10</u>	257

## IN FREE GRANT TERRITORY.

Sudbury.....	Unattached.....	52		
Temiskaming.....	".....	2		
Algoma.....	Marksville.....	1		
		<u>55</u>		55

Statement showing number of lots resumed for non-performance of settlement duties by, or on behalf of Returned Soldiers.

## IN SALE TERRITORY.

		No. of lots	Total
Temiskaming.....	Unattached.....	3	
".....	Cochrane.....	11	
".....	New Liskeard.....	1	
".....	Englehart.....	2	
".....	Matheson.....	2	
Algoma.....	Hearst.....	11	
Thunder Bay.....	Unattached.....	1	
		<u>31</u>	31

## IN FREE GRANT TERRITORY.

Temiskaming.....	Unattached.....	3		
Rainy River.....	Stratton.....	2		
Thunder Bay.....	Port Arthur.....	1		
		<u>37</u>		6
				<u>37</u>



*Appendix No. 13—Continued*

## ISLANDS SOLD.

Part or Parcel.	Township.	District or County	Agent.	No. of Acres Sold.
B 278.....	Conger.....	Parry Sound.....	Miss I. M. Campbell..	4.30
Pt. 30a.....	Harrison.....	".....	".....	12.
Pt. 358a.....	".....	".....	".....	.30
Pt. 265c.....	Carling.....	".....	".....	.50
Pt. B 715.....	Cowper.....	".....	".....	11.
75a.....	Shawanaga.....	".....	".....	.12
B 503.....	Cowper.....	".....	".....	1.
B 477.....	".....	".....	".....	41.
B 501a.....	".....	".....	".....	1.1
Bob Island.....	Medora.....	Muskoka.....	J. B. Brown.....	.10
Eleanor Island...	".....	".....	".....	.12
Pt. 300c.....	Carling.....	Parry Sound.....	Miss I. M. Campbell..	14.
Leslie Island.....	Medora.....	Muskoka.....	J. B. Brown.....	.29
Island B.....	Cowper.....	Parry Sound.....	Miss I. M. Campbell..	4.20
Bedford Island...	St. Joseph's Channel	Algoma.....	W. E. Whybourne.....	10.
Pt. No. 133.....	Patterson.....	Parry Sound.....	H. J. Ellis.....	5.
Pt. No. 133.....	".....	".....	".....	1.
Pt. B 509.....	Cowper.....	".....	Miss I. M. Campbell..	.50
Pt. B 369.....	Conger.....	".....	".....	56.
Pt. C 270.....	Carling.....	".....	".....	.66
Wright Island...	Finlayson.....	Nipissing.....	Unattached.....	.29
Pt. 15a.....	Harrison.....	Parry Sound.....	Miss I. M. Campbell..	6.6
Pt. 782a.....	".....	".....	".....	5.45
Pt. 11a.....	".....	".....	".....	6.
Island B.....	Cowper.....	".....	".....	1.1
Big Island.....	Chandos.....	Peterboro.....	Wm. Hales.....	.37
Hawk Island.....	".....	".....	".....	.23
B 485.....	Cowper.....	Parry Sound.....	Miss I. M. Campbell..	3.1
Pt. Island 27a...	Harrison.....	".....	".....	21.
Pt. Island 22...	Langton.....	Kenora.....	J. E. Gibson.....	3.1
				209.55

*Appendix No. 13—Concluded*

## ISLANDS PATENTED.

Part or Parcel.	Township.	District or County.	Agent and P.O. Address.	No. of Acres Patented.
Island opp. Lot 20, Con. 7. . . . .	Baxter. . . . .	Muskoka. . . . .	J. B. Brown, Bracebridge. . . . .	5.
Island 358a. . . . .	Harrison. . . . .	Parry Sound. . . . .	Miss I. M. Campbell, Parry Sound. . . . .	.30
Island B 715. . . . .	Cowper. . . . .	" . . . . .	Miss I. M. Campbell, Parry Sound. . . . .	11.
Island 75a. . . . .	Shawanaga. . . . .	" . . . . .	Miss I. M. Campbell, Parry Sound. . . . .	.12
Miller Island. . . . .	Mowat (in front of). . . . .	" . . . . .	Miss I. M. Campbell, Parry Sound. . . . .	18.
Pt. Franklin Isld. . . . .	Carling. . . . .	" . . . . .	Miss I. M. Campbell, Parry Sound. . . . .	14.
Lister Island. . . . .	Medora. . . . .	Muskoka. . . . .	J. B. Brown, Bracebridge. . . . .	.29
Island B 404. . . . .	Cowper. . . . .	Parry Sound. . . . .	Miss I. M. Campbell, . . . . .	4.20
Island 17. . . . .	St. Joseph Channel. . . . .	Algoma. . . . .	W. E. Whybourne, Marksville. . . . .	10.
Island B. . . . .	Cowper. . . . .	Parry Sound. . . . .	Miss I. M. Campbell, Parry Sound. . . . .	.50
Island 270. . . . .	Carling. . . . .	" . . . . .	Miss I. M. Campbell, Parry Sound. . . . .	.5
Wright Island. . . . .	Finlayson. . . . .	Nipissing. . . . .	Unattached. . . . .	.29
Island opp. Lot 20 in 2. . . . .	Cavendish. . . . .	Peterboro. . . . .	A. N. Wilson, Kinmount. . . . .	5.6
Island 782a. . . . .	Harrison. . . . .	Parry Sound. . . . .	Miss I. M. Campbell, Parry Sound. . . . .	5.45
Island, Parcel of 11a. . . . .	" . . . . .	" . . . . .	Miss I. M. Campbell, Parry Sound. . . . .	6.
Island B 474. . . . .	Cowper. . . . .	" . . . . .	Miss I. M. Campbell, Parry Sound. . . . .	1.1
Hawk Island. . . . .	Chandos. . . . .	Peterboro. . . . .	Wm. Hales, Apsley. . . . .	.23
Big Island. . . . .	" . . . . .	" . . . . .	" . . . . .	.37
B 485. . . . .	Cowper. . . . .	Parry Sound. . . . .	Miss I. M. Campbell, Parry Sound. . . . .	3.1
Pt. of 26a. . . . .	Harrison. . . . .	" . . . . .	Miss I. M. Campbell, Parry Sound. . . . .	6.
Parcel 5 of Isld. A . . . . .	" . . . . .	" . . . . .	Miss I. M. Campbell, Parry Sound. . . . .	21.
Island in Lake. . . . .	Minden. . . . .	Haliburton. . . . .	R. H. Baker, Minden. . . . .	7.4
Island 22 in Eagle Lake. . . . .	Langton. . . . .	Kenora. . . . .	J. E. Gibson, Kenora. . . . .	3.1
Island B. . . . .	Merritt. . . . .	Sudbury. . . . .	E. Arthurs, Espanola. . . . .	7.
Island opp. Lot 1 in 12, Medora. . . . .	Freeman and Medora. . . . .	Muskoka. . . . .	J. B. Brown, Bracebridge. . . . .	.66
Island A. . . . .	Merritt. . . . .	Sudbury. . . . .	E. Arthurs, Espanola. . . . .	1.
Island 347a. . . . .	Harrison. . . . .	Parry Sound. . . . .	Miss I. M. Campbell, Parry Sound. . . . .	20.
Island 34a. . . . .	" . . . . .	" . . . . .	Miss I. M. Campbell, Parry Sound. . . . .	.62
Island W.S. 86. . . . .	Pickerel River. . . . .	" . . . . .	Miss I. M. Campbell, Parry Sound. . . . .	3.66
Island W.D. in McLeod's Bay. . . . .	Springer. . . . .	Nipissing. . . . .	J. A. Philion, Sturgeon Falls. . . . .	.5
				154.92

W. R. LEDGER,  
Free Grants Clerk.  
SELBY DRAPER,  
Chief Clerk.

W. C. CAIN,  
Deputy Minister.

*Appendix No. 14.*

Statement showing the number of purchasers, acres sold, sales cancelled, acres resumed, patents issued, and acres patented in Townships other than Free Grant during the year ending 31st October, 1921.

Township	District or County.	Agent.	No. of acres sold.	No. of pur- chasers.	No. of sales cancelled.	No. of acres resumed.	No. of patents issued.	No. of acres patented.
Machin.....	Temiskaming..	S. J. Dempsay, Cochrane....	6,014.	43	1	150.		
Blount.....	"	"	402.	3	4	553.		
Shackleton...	"	"	7,854.	55	3	478.		
Brower.....	"	"	1,084.50	7	18	2,822.		
Pyne.....	"	"	1,456.	9	3	481.50		
Newmarket..	"	"	3,039.	19	7	1,053.50	1	157.
Fauquier.....	"	"	2,864.	20	5	700.	3	319.
Fox.....	"	"	4,872.	31	11	1,765.		
Clute.....	"	"	2,664.	18	20	2,996.	7	1,049.
Kennedy.....	"	"	1,182.	8	12	1,790.		
Calder.....	"	"	4,935.	33	11	1,633.	1	150.
Glackmeyer..	"	"	846.	6	16	2,402.	4	439.
Fournier.....	"	"	1,075.50	7	8	1,229.50	1	148.
Leitch.....	"	"	1,589.	11	5	744.	3	111.
Colquhoun...	"	"						
Lamarche....	"	"	481.	3	8	1,286.50	4	641.
Bayley.....	Temiskaming..	Jos. Woollings, Englehart...						
Blain.....	"	"	162.50	1				
Catharine....	"	"			2	320.	4	398.50
Chamberlain..	"	"			1	160.	1	93.
Dack.....	"	"	159.	1			3	369.
Davidson.....	"	"						
Eby.....	"	"	164.04	2			6	164.50
Evanturel....	"	"			1	160.	2	318.50
Gross.....	"	"	446.50	3	1	127.50	2	74.50
Ingram.....	"	"	160.	1	3	481.	1	161.
Marter.....	"	"	160.	1	4	641.50	2	319.50
Marquis.....	"	"	629.	4	2	318.50	2	319.
Otto.....	"	"	318.50	2	1	155.	1	40.
Pacaud.....	"	"	160.	1	4	640.	3	381.75
Pense.....	"	"	159.	1	2	318.		
Robillard....	"	"	160.	1	2	320.	4	640.
Savard.....	"	"	320.50	2	7	1,120.50	3	479.
Sharpe.....	"	"	128.	1	1	128.	2	261.
Truax.....	"	"	158.50	1				
Smyth.....	Temiskaming..	Mark Morgan, Elk Lake....						
Lorrain.....	Temiskaming..	Neil J. McAulay Haileybury..	160.	1			6	713.
Beatty.....	Temiskaming..	J. E. Mills, Matheson...						
Benoit.....	"	"	160.	1	2	321.	2	324.50
Bond.....	"	"	1,125.	7	8	1,175.25	10	432.
Bowman.....	"	"	1,443.	10	8	1,259.	1	154.
Calvert.....	"	"	154.	1	1	154.	1	159.50
Carr.....	"	"	318.	2	2	319.	3	357.25
Clergue.....	"	"					4	632.
Currie.....	"	"	642.	4	4	640.		
Dundonald...	"	"	796.50	5	8	1,282.		
			1,187.	7	6	823.		

## Appendix No. 14—Continued

Township.	District or County.	Agent.	No. of acres sold.	No. of pur- chasers.	No. of sales cancelled.	No. of acres resumed.	No. of patents issued.	No. of acres patented.
Evelyn.....	Temiskaming..	J. E. Mills,						
German.....	"	Matheson...					1	136.
Hislop.....	"	"	1,025.	7	4	797.50	3	476.
Matheson.....	"	"	1,440.50	9	11	1,760.	2	172.
Mountjoy.....	"	"	1,119.	8	8	1,240.	1	88
McCart.....	"	"	793.	5	5	798.	1	160.
Playfair.....	"	"	794.50	5	1	159.50	5	550.
Stock.....	"	"	789.	5	11	1,741.50		
Taylor.....	"	"	647.50	4	4	646.	5	800.72
Walker.....	"	"	137.	1	1	137.	1	156.
Armstrong....	"	J. W. Bolger, New Liskeard	80.	1			4	640.50
Auld.....	"	"			2	315.50	3	79.75
Beauchamp....	"	"	317.	2	2	319.	1	160.
Brethour.....	"	"	261.50	2	3	480.50	3	440.50
Bryce.....	"	"	479.	3	3	479.50	1	160.
Bucke.....	"	"						
Cane.....	"	"	154.	1	2	326.	7	639.50
Casey.....	"	"					5	735.75
Dymond.....	"	"					1	80.
Firstbrook....	"	"	162.50	1	3	475.50	2	322.
Harley.....	"	"					5	590.
Harris.....	"	"					3	243.
Henwood.....	"	"			1	162.50	2	316.50
Hilliard.....	"	"	323.	2			5	715.50
Hudson.....	"	"	293.	2	4	530.	1	162.50
Kerns.....	"	"					2	380.
Lundy.....	"	"			1	160.		
Tudhope.....	"	"			2	322.	4	155.
Casgrain.....	Algoma.....	J. L. O'Donnell, Hearst.....	3,850.	26	17	2,606.	1	151.
Eilber.....	"	"	5,507.	36	12	1,787.		
Hanlan.....	"	"	8,981.	60	30	4,499.	1	167.
Kendall.....	"	"	8,654.	58	26	3,842.	2	232.
Lowther.....	"	"	10,084.	68	19	2,791.		
Forbes.....	Thunder Bay..	J. A. Oliver, (acting)						
		Port Arthur..	1,455.50	9	3	508.	2	264.
Lyon.....	"	"	426.	3	1	161.	4	580.30
Nepigon.....	"	"	160.	1			3	459.78
Mason.....	Nipissing.....	J. A. Philion, Sturgeon Falls					3	315.90
Scollard.....	"	"	83.	1			2	2.44
Hugel.....	Nipissing.....	John Brown, Markstay....	320.	2			3	335.25
Widdifield....	Nipissing.....	W. J. Parsons, North Bay...	1,282.	8	7	1,119.50	4	754.
Badgerow.....	Nipissing.....	Unattached....	326.	2			4	594.
Crerar.....	"	"	469.	3			3	466.50
Falconer.....	"	"		1			1	169.
Field.....	"	"	160.50	1			2	135.
Gibbons.....	"	"					7	866.50
Loudon.....	"	"	161.50	1			1	161.50



## Appendix No. 14—Continued

Township	District or County	Agent	No. of acres sold	No. of pur- chasers	No. of sales cancelled	No. of acres resumed	No. of patents issued	No. of acres patented
Awrey.....	Sudbury.....	R. A. Teasdale, Massey.....	160.	1				
Hallam.....	".....	".....	124. 50	1			1	170. 50
Harrow.....	".....	".....	421.	3			1	137.
May.....	".....	".....	459. 50	3			2	238. 50
Salter.....	".....	".....						
Shedden.....	".....	".....					1	160.
Victoria.....	".....	".....						
Dowling.....	Sudbury.....	J. K. McLennan Sudbury.....	167. 50	1			1	138. 21
McKim.....	".....	".....	160.	1			3	129. 23
Loughrin.....	".....	".....	177.	1				
Cody.....	Temiskaming..	Unattached....	159. 50	1			4	2. 70
Maisonville..	".....	".....					19	720. 50
Owens.....	".....	".....	100.	1				
O'Brien.....	".....	".....	1,592.	17	2	213.		
Gough.....	Sudbury.....	Unattached....	85. 50	2				
Bigwood.....	".....	".....	803.	5				
Burwash.....	".....	".....					5	199.
Creighton.....	".....	".....						
Delamere.....	".....	".....						
Dennison.....	".....	".....						
Drury.....	".....	".....						
Dryden.....	".....	".....						
Falconbridge.	".....	".....						
Foleyet.....	".....	".....					2	409. 23
Graham.....	".....	".....	. 70	1			2	1. 06
Lorne.....	".....	".....	315. 50	2			2	80. 84
Louise.....	".....	".....	364.	3			5	523.
McKinnon.....	".....	".....						
MacLennan.....	".....	".....					2	42. 20
Shakespeare..	".....	".....	244.	2			2	61. 50
Snider.....	".....	".....					2	10. 74
Waters.....	".....	".....	177.	1			2	120.
Drayton.....	Kenora.....	S. H. Holland, Kenora.....	144.	1				
Dummer.....	Peterborough..	Unattached....			1	100.		
Bright.....	Algoma.....	Thos. Dodds, Thessalon... ..	160.	1				
Bright Ad....	".....	".....						
Day.....	".....	".....						
Gladstone.....	".....	".....					4	501.
Gould.....	".....	".....						
Haughton.....	".....	".....						
Johnson.....	".....	".....	160. 50	1			2	40.
Kirkwood.....	".....	".....						
Parkinson.....	".....	".....	80.	1	1	160.	2	318. 50
Patton.....	".....	".....			1	157. 50	1	158.
Rose.....	".....	".....					1	160.
Striker.....	".....	".....			1	160.		
Thompson.....	".....	".....						
Wells.....	".....	".....						
Aweres.....	Algoma.....	Thos. Dean, Sault Ste. Marie.....					1	153.

## Appendix No. 14—Continued

Township	District or County	Agent.	No. of acres sold	No. of pur- chases	No. of sales cancelled	No. of acres resumed	No. of patents issued	No. of acres patented
Tarentorus...	"	Thos. Dean					1	160.
Vankoughnet.	"	Sault St. Marie	302.	2				
Jaffray	Kenora	Unattached					1	60.50
Malachi	"	"						
Umbach	"	"	160.	1				
Matchedash.	Simcoe	Unattached	14.	2	1	60.	5	33.84
Rama	Ontario	Unattached	50.	1			1	50.
Carden	Victoria	Unattached						
Digby	"	"	104.	1				
Laxton	"	"						
Somerville	"	"	167.	2	1	159.	1	100.
Ashby	Lennox and Addington	Unattached	100.	1			4	222.
Denbigh	"	"						
Sheffield	"	"					3	482.50
Admaston	Renfrew	Unattached	200.	2			4	400.
Bagot	"	"	285.	2	1	100.	2	200.
Blithfield	"	"					3	363.
Bromley	"	"			1	100.	4	295.
Horton	"	"					2	202.
McNabb	"	"			1	100.	1	100.
Westmeath	"	"					1	80.
Tudor	Hastings	Unattached			1	99.		
Beckwith	Lanark	Unattached						
Dalhousie	"	"	100.	1			2	290.
Darling	"	"					2	130.
Pakenham	"	"						
Lanark	"	"						
Sherbrooke N.	"	"						
Malden	Essex, S.	Unattached	13.42	1	1	6.	1	14.55
			107,914.03	736	398	60,525.25	307	31,390.87

*Appendix No. 14—Concluded.*

Statement showing the number of purchasers, acres sold and of patents issued in Townsites during the year ending 31st October, 1921.

Townsite.	District or County.	Agent.	No. of acres sold.	No. of purchasers.	No. of patents issued.	No. of acres patented.
Capreol.....	Sudbury.....	Unattached.....	2.20	16	2	.27
Gogama.....	".....	".....	1.27	12		
Frederickhouse.....	".....	".....	.10	1	3	.21
Alexander.....	Temiskaming.....	Unattached.....	1.50	5	2	.50
Kirkland Lake.....	".....	".....	1.10	11	5	.33
Hearst.....	Algoma.....	Unattached.....	6.25	25	3	.75
Missinabie.....	".....	".....	3.57	20		
Macfarlane.....	Kenora.....	Unattached.....	.76	2	2	.93
Minaki.....	".....	".....	.23	1		
Petawawa.....	Renfrew.....	Unattached.....	11.03	1	3	22.40
Trenton.....	Hastings.....	Unattached.....	.66	1	1	.66
Shrewsbury.....	Kent.....	Unattached.....	20.	1	3	22
Grant.....	Thunder Bay.....	Unattached.....	1.02	6	6	1.20
			49.69	120	30	49.25

## ISLANDS SOLD.

Cody.....	Temiskaming.....	Unattached.....				
H 2 in Night Hawk Lake.....	".....	".....	.10	1	1	.10
H 3 " " ".....	".....	".....	.10	1	1	.10
H16 " " ".....	".....	".....	1.50	1	2	2.50
X South Crosby.....	Leeds.....	".....	.05	1	2	.85
Allen Island (42).....	Sudbury.....	".....	31.50	1	1	31.50
		Total.....	33.5	5	7	33½

Number of lots assigned..... 314

Number of acres assigned..... 44,637

SELBY DRAPER, Chief Clerk.

J. E. DRINKWATER, Clerk of Sales.

W. C. CAIN,

Deputy Minister.

*Appendix No. 15.*

HONOURABLE BENIAH BOWMAN,  
*Minister of Lands and Forests,*

## REPORT ON CROWN SURVEYS.

SIR,—The nature and extent of the surveys carried on during the past year under instructions from this Department may be briefly described as follows:

## BASE AND MERIDIAN LINES.

Phillips and Benner, Ontario Land Surveyors, of Port Arthur, and K. G. Ross, Ontario Land Surveyor, of Sault Ste. Marie, were charged with the running of certain base and meridian lines in the territory lying west of the Nepigon Forest Reserve, District of Thunder Bay. The extent of this work is approximately 200 miles, and the reports will disclose the physical features of the large unexplored area to the east of the Lake Superior Branch and south of the Transcontinental line of the Canadian National Railway. A meridian line is run through this territory along or near to the divide between Lake Nepigon and Sturgeon Lake waters and intersects the Canadian National Railway near Allanwater.

Ontario Land Surveyors Sutcliffe and Neelands were instructed to perform a survey of a similar nature in the District of Timiskaming lying between the Abitibi and Mattagami Rivers and north of Niven's base line, in latitude 49 degrees, 35 minutes, 30 seconds north. The extent of this work was over 100 miles, and within this area is included the Great Falls on both rivers mentioned. Owing to the early extension of the Temiskaming and Northern Ontario Railway north from Cochrane, the blocking out of this area will be of great advantage in locating the railway line, also timber and land areas therein.

## TOWNSHIP BOUNDARIES.

The blocking out of townships was continued in the Districts of Sudbury and Algoma in the country lying between the Canadian Pacific Railway and the Canadian Northern line of the Canadian National Railways, the extent of lines being approximately 525 miles.

H. J. Beatty, Ontario Land Surveyor, established the boundaries of several nine-mile townships in the country east of the Algoma Central and Hudson Bay Railway and north of Missinaibi Lake, in the District of Algoma.

J. W. Fitzgerald, Ontario Land Surveyor, and Speight & Van Nostrand, Ontario Land Surveyors, completed the blocking out of the six-mile townships in the north-west part of the District of Sudbury.

C. V. Gallagher, Ontario Land Surveyor, and McAuslan and Anderson, Ontario Land Surveyors, were engaged in similar work north of the Canadian Pacific Railway between Spanish Forks and Woman River Stations.

## INTERPROVINCIAL BOUNDARY BETWEEN ONTARIO AND MANITOBA.

Owing to the prospecting and mining activity in the district north of the Winnipeg River, in the Province of Manitoba, and that mining claims might be staked over the interprovincial boundary line at any time, in order to prevent



possible complications it seemed advisable to provide for an early defining of the said line north from where it was terminated by the survey in 1898 at the Winnipeg River.

An Act of Parliament of Canada assented to 1st April, 1912, describes the first stretch of this interprovincial boundary as follows:

"Commencing at the most northerly point of the westerly boundary of the Province of Ontario as determined by "The Canada (Ontario Boundary) Act 1889; thence due north along the same meridian to the intersection thereof with the centre of the road allowance on the 12th base line of the system of Dominion Land Surveys."

An Order in Council approved by His Honour the Lieutenant-Governor dated 9th day of February, 1921, appointed the Director of Surveys Interprovincial Boundary Commissioner for the Province of Ontario. An order in council approved by His Excellency the Governor-General dated 26th day of February, 1921, appointed the Surveyor General Interprovincial Boundary Commissioner for the Dominion. These Orders in Council authorized the said Commissioners to take the necessary steps for proceeding with the survey.

J. W. Pierce, Ontario and Dominion Land Surveyor, of Ottawa, was instructed to take charge of the field operations and actual survey work on the ground commenced about 1st June, 1921, and continued until the middle of October.

The character of the work may best be understood by quoting some extracts from Surveyor Pierce's interim report, as follows:

"About 70 miles of line was opened out, along which 52 monuments were erected. Of these, 11 were concrete monuments, while the rest were rock bolts cemented in holes in the rock alongside of a rock pyramid 5 feet square at the base and 3 feet high. These pyramids were solidly built of suitable stone, which was roughly hewn so that they present a finished appearance. The line itself was so opened that it has a 12 foot clear sky line, and its centre on the ground was cleared as far as possible of all obstructions to careful chaining.

"The main chainage was obtained by suspending a chain between two tripods on one of which a transit was mounted for purposes of alignment and measurement of slope. A uniform tension was obtained by the use of a spring balance while temperature corrections were applied throughout. The chain used in the field was obtained at intervals with a standard which had previously been tested here in Ottawa.

"A further chainage, independent of this semi-precise method, was carried on by the use of a 300 foot chain, chainage pins, plumbobs and clinometers as a check, for the purpose of detecting errors. Distances across water were obtained by the mean of two independent triangles with apex angles of 30 degrees. After the first couple of weeks, the entire chainage, both main and check, was carried on by two chainmen, one of whom was a Land Surveyor.

"In addition to the topography obtained along the line, traverses were made as far as possible, of all the lakes that could be found within a mile of the line. That part of the work is shown on the accompanying plots and will be greatly extended by the addition of the information obtained by the geologists.

"The line passed through a well wooded country, which, except through a part south of Snowshoe Lake, has not been touched by fire. Some timber

of commercial value was encountered, although the greater portion is not large enough for that purpose. Jackpine, of course, predominates. The surface is extremely rough and irregular, with a prevailing direction of ridge and valley nearly at right angles to the line. Except in the vicinity of the mining district, there has been no summer travel here for years, so that our transportation problem was one of the most difficult of our operations. As we had little advance knowledge of the district, I endeavored to make use of Indian guides, but with only indifferent success, as these had a knowledge limited to an area they had hunted through. When once past that area, they were useless in locating new routes. We found that we had to depend on ourselves to hunt up the water areas and open out portages for the use of the transport. On account of not getting our caches properly distributed last spring, this required a great deal of labour during the summer, which at times interfered with the progress of the line clearing. Much of this may be avoided next season by having the caches placed earlier in the winter and I am hoping that this may be attended to during January and February."

#### LAKE AND RIVER TRAVERSE.

The traverse surveys performed by the several survey parties were as follows:

- (1) Continuation of traverse of islands and shores of Lake St. Joseph, together with certain township lines adjoining in the District of Thunder Bay, by James S. Dobie, Ontario Land Surveyor.
- (2) Traverse of islands and shores of French and Pickrel Rivers extending from the Canadian Pacific Railway crossing to Georgian Bay, by T. J. Patten, Ontario Land Surveyor.
- (3) Continuation of traverse of Missinaibi River, by C. R. Kenny, Ontario Land Surveyor.
- (4) Traverse of Kenogami River, District of Thunder Bay, by R. S. Kirkup, Ontario Land Surveyor.
- (5) Survey of islands at the southern end of Lake of the Woods, by D. J. Gillon, Ontario Land Surveyor.
- (6) Traverse of lakes in the Timagami Forest Reserve, districts of Timiskaming and Nipissing, by T. G. Code, Ontario Land Surveyor.
- (7) Traverse of certain lakes and rivers in the townships of Wallbridge and Harrison, District of Parry Sound, by J. T. Coltham, Ontario Land Surveyor.

#### TIMBER LIMIT SURVEYS.

The centre lines dividing into east and west halves Townships Nos. 41 and 44 along the line of the Canadian Pacific Railway, in the District of Sudbury, were run under instructions from this Department by Lincoln Mooney, Ontario Land Surveyor, for the purpose of defining certain timber areas.

Timber areas in the District of Kenora, south of the Canadian Pacific Railway, near Ignace, were defined by Phillips and Benner, Ontario Land Surveyors.

A timber line was also run in the township of Penhorwood, in the District of Sudbury, by Lincoln Mooney, Ontario Land Surveyor.

## MISCELLANEOUS SURVEYS.

- (1) The subdivision of part of the Town Site of Kapuskasing was completed by G. F. Summers, Ontario Land Surveyor. The subdivided area comprises 850 town lots with streets, boulevards and park areas.
- (2) An addition to the Town Site of Hearst, consisting of blocks lettered A to U, including an extension of the several streets; this area lies south of the already subdivided portion and north of the Mattawishquia River. Survey performed by John Lanning, Ontario Land Surveyor.
- (3) Resurvey of certain lines in the northern part of the township of Pardee was made as directed by Ontario Land Surveyors Bingham and Kirkup.
- (4) R. M. Anderson, Ontario Land Surveyor, was instructed to establish the boundaries of Long Point Park on Lake Erie, having due regard to lands already granted by letters patent.
- (5) C. E. Fitton, Ontario Land Surveyor, was instructed to make a survey of certain park lots on lots 28 and 29, concession 8, township of Wood, and prepare plan for registration.
- (6) Sutcliffe and Neelands, Ontario Land Surveyors, made a survey of the line between lots 11 and 12, concession 4, township of Firstbrook, District of Timiskaming.

## INSPECTION.

The reports by Inspector C. E. Fitton on the field work show that with one or two exceptions, the work has been well and carefully performed, and it is satisfactory to know that the placing of standard iron posts and construction of mounds and pits have received proper attention.

Detailed reports of the several surveys for which returns have been made during the year will be found in Appendices 15A to 40 inclusive.

L. V. RORKE,  
*Director of Surveys.*

Toronto, October 31st, 1921.

*Appendix No. 15-a.*

Statement of Municipal Surveys confirmed during the twelve months ending October 31st., 1921.

No.	Name of Surveyor.	No.	Date of Instructions.	Description of Survey.	Date when confirmed under R. S. O. 1914, Chapter 156, Secs. 10-15, inclusive.
1	James J. MacKay.	723	April 9, 1920.	To survey the original road allowance between the 2nd and 3rd concessions of the Township of Beverley, extending from the westerly side of lot No. 31 to the easterly side of lot No. 36, and to plant stone or other durable monuments to mark the said road allowance. ....	Nov. 2, 1920.
2	Edward J. Raimboth. ....	724	Aug. 17, 1920	To survey the concession road allowance between the 4th and 5th concessions, Ottawa front, lying between the westerly side of the side road between lots 5 and 6 and the easterly side of the side road between lots 15 and 16 on said concession road allowance, in the Township of Gloucester, and that stone or other durable monuments be placed to mark the boundary of the said road allowance. ....	Jan. 27, 1921.

L. V. RORKE,  
Director of Surveys.

W. C. CAIN,  
Deputy Minister Lands and Forests.



*Appendix No. 16.*

Statement of Municipal Surveys for which instructions issued during the twelve months ending October 31st, 1921.

No.	Name of Surveyor.	No.	Date of Instructions.	Description of Survey.
1	Speight and vanNostrand....	726	Aug. 18, 1921	To survey the limits of Durie Street in the City of Toronto, in the County of York, and to plant stone or other durable monuments to define the limits of said street.
2	F. F. Miller.....	727	April 12, 1921	To survey the road allowance along the 8th and 9th concessions of the Township of Hinchinbrooke from the south boundary of said Township northerly to lot No. 3, and that stone or other durable monuments be placed to mark the said road allowance.
3	J. J. Newman.....	728	May 5, 1921.	<p>To survey and mark with permanent monuments the limits of the Tecumseh Road in the County of Essex, as follows:</p> <p>(a) The original road allowance along the front of lots adjoining Lake St. Clair in the Township of Maidstone extending from the Belle River westerly to where the said Tecumseh Road leaves the allowance for road laid out in the original survey of the said Township and is not intended to follow the same.</p> <p>(b) Survey of the original road allowance between concessions 1 and 2 from the westerly limit of Township lot 129 to the easterly limit of the Town of Walkerville in the Township of Sandwich East.</p> <p>(c) Survey of the original road allowance across the Township of Anderdon through and in front of lots fronting on the Detroit River.</p>

L. V. RORKE,  
Director of Surveys.

W. C. CAIN,  
Deputy Minister Lands and Forests.

*Appendix No. 17.*

Statement of Crown Surveys in progress during the twelve months ending October 31st, 1921.

No.	Date of Instructions.	Name of Surveyor.	Description of Surveys.	Amount paid.
				\$ c.
1	Oct. 3, 1921.	R. M. Anderson....	Retracing and establishing the boundaries of land lying between Long Point and Walsingham Township.....	200.00
2	April 15, 1921.	H. J. Beatty.....	Survey certain township outlines in the District of Algoma.....	7,650.00
3	May 16, 1921.	Jas. T. Coltham....	To traverse certain Lakes and Rivers in the Township of Wallbridge and Harrison.....	2,100.00
4	May 2, 1921.	T. G. Code.....	Traverse certain Lakes and Streams in The Timagami Forest Reserve, District of Timiskaming and Nipissing...	4,950.00
5	April 15, 1921.	James S. Dobie....	Traverse the Islands and shores of Lake St. Joseph and run certain Base and Meridian Lines in Thunder Bay District.....	7,650.00
6	May 17, 1921.	C. E. Fitton.....	Inspection of Surveys, 1921.....	2,700.00
7	April 15, 1921.	J. W. Fitzgerald....	Survey certain Township Outlines north of C. P. R. in Districts of Sudbury and Algoma.....	7,290.00
8	May 18, 1921.	D. J. Gillon.....	Survey Islands and shore lines in part of Lake of the Woods, in the Districts of Rainy River and Kenora.....	4,800.00
9	May 5, 1921.	Chas. V. Gallagher .	Survey certain Township Outlines north of the C. P. R. in the District of Sudbury.....	5,250.00
10	May 2, 1921.	Roy S. Kirkup.....	Traverse the Kenogami River and its expansions in the Districts of Thunder Bay and Algoma.....	2,550.00
11	April 22, 1921.	Carmen R. Kenny..	To continue traverse of Missinaibi River in Districts of Algoma and Timiskaming.....	3,800.00
12	Oct. 3, 1921.	L. Mooney.....	Survey a Meridian, Township 44, along C. P. R., District of Sudbury.....	300.00
13	May 6, 1921.	McAuslan and Anderson.....	Survey certain Township Outlines north of C. P. R., District of Sudbury.....	5,900.00
14	May 16, 1921.	T. J. Patten.....	Survey Traverse Islands in French River, Districts of Parry Sound and Sudbury	3,100.00
15	April 15, 1921.	Phillips and Benner.	Survey certain Base and Meridian Lines in District of Thunder Bay.....	7,470.00
16	Aug. 22, 1921.	Phillips and Benner.	Survey Outlines Timber Berth south of Ignace, District of Kenora.....	1,000.00
17	Mar. 7, 1921.	J. W. Pierce.....	Survey of portion of Interprovincial Boundary between Ontario and Manitoba.....	12,500.00

*Appendix No. 17.—Concluded.*

Statement of Crown Surveys in progress during the twelve months ending October 31st, 1921.

No.	Date of Instructions.	Name of Surveyor.	Description of Surveys.	Amount paid.
18	April 15, 1921.	K. G. Ross. ....	Survey of Base and Meridian Line, District of Thunder Bay.....	6,800.00
19	April 15, 1921.	Speight and Van Nostrand.....	Survey certain Township Outlines at head waters of Missinabie River, Districts of Sudbury and Algoma.....	8,415.00
20	Nov. 4, 1920.	Bingham and Kirkup.....	Re-survey certain lines in Township of Pardee, District of Thunder Bay....	3,450.00
21	May 27, 1920.	G. F. Summers.....	To survey a townplot and other lands in the vicinity of Kapuskasing, Township of O'Brien, District of Timiskaming..	3,550.00
				<u>\$101,425.00</u>

L. V. RORKE,  
Director of Surveys.W. C. CAIN,  
Deputy Minister of Lands and Forests.

*Appendix No. 18.*

Statement of Crown Surveys completed and closed during the twelve months ending  
October 31st, 1921.

No.	Date of Instructions.	Name of Surveyor.	Description of Survey.	Amount paid, \$ c.
1	May 11, 1920.	Chas. V. Gallagher.	To survey certain Township Outlines north of C. P. R., District of Sudbury.	5,916.79
2	May 12, 1920.	M. E. Crouch.....	To survey certain Township Outlines north of C. P. R., District of Thunder Bay.....	1,760.90
3	May 18, 1920.	Phillips and Benner.	To survey Meridian Lines forming west boundary of the Nepigon Forest Reserve, District of Thunder Bay.....	2,158.75
4	May 21, 1920.	Speight and Van Nostrand.....	To survey certain Township Outlines north of C. P. R., District of Sudbury.	2,003.92
5	May 21, 1920.	J. W. Fitzgerald....	To survey certain Township Outlines north of C. P. R., District of Sudbury.	1,921.78.
6	May 12, 1920.	H. J. Beatty.....	To survey certain Township Outlines, District of Sudbury.....	1,967.53
7	May 4, 1920.	C. R. Kenny.....	To continue traverse of Missinabi Lake and River, Districts of Algoma and Sudbury.....	1,869.55
8	May 4, 1920.	T. J. Patten.....	To traverse Lake Penage Islands and other lakes and outlets in District of Sudbury.....	2,484.93
9	Aug. 24, 1920.	Sutcliffe and Neelands.....	To traverse part of the Montreal River, District of Timiskaming.....	2,147.80
10	May 17, 1920.	K. G. Ross.....	To survey a Meridian and Base Line in in the District of Patricia.....	4,215.75
11	May 4, 1920.	T. G. Code.....	To continue traverse of certain Lakes and Rivers, Districts of Sudbury and Timiskaming.....	2,250.84
12	May 5, 1920.	Bingham and Kirkup.....	Traverse certain Lakes and Rivers, District of Algoma.....	2,159.63
13	May 15, 1920.	J. S. Dobie.....	To traverse the shores of Lake St. Joseph and run certain Base and Meridian Lines in the District of Patricia.....	2,872.82
14	May 12, 1920.	A. C. Young.....	To survey certain Township Outlines north of C. P. R. District of Sudbury.	1,895.15
15	May 11, 1920.	McAuslan and Anderson.....	To survey certain Township Outlines north of C. P. R., District of Sudbury.	1,359.38
16	May 27, 1921.	John Lanning.....	Survey additional Townplot Hearst.....	867.80
17	May 6, 1921.	Sutcliffe and Neelands.....	Survey certain Meridian and Base Lines, District of Timiskaming.....	10,076.30



*Appendix No. 18.—Concluded.*

Statement of Crown Surveys completed and closed during the twelve months ending  
October 31st, 1921.

No.	Date of Instructions.	Name of Surveyor.	Description of Survey.	Amount paid
18	Aug. 24, 1921.	L. Mooney.....	Survey Meridian Line in Township No. 41 along C. P. R., District of Sudbury.	602.80
19	Nov. 14, 1920.	C. E. Fitton.....	Inspection of Surveys for 1920.....	2,003.71
20	Feb. 28, 1920.	J. S. Dobie.....	To survey Kaskaweogama Lake and Island Lake.....	1,072.75
21	May 1, 1919.	G. L. Ramsay.....	To survey Base and Meridian Lines, District of Thunder Bay.....	2,056.50
22	Dec. 16, 1920.	Sutcliffe and Neelands.....	Survey in Township of Firstbrook between lots 11 and 12 in the 4th concession.....	41.25
23	Dec. 16, 1920.	L. Mooney.....	To run a line in Township of Penhorwood, District of Sudbury.....	1,184.10
24		C. E. Fitton.....	Survey of lots 28 and 29, concession 8, Township of Wood.....	446.10
25	.....	.....	Reid and Brown—Surveyors' Posts.....	908.16
				\$ 56,244.99

L. V. RORKE,  
Director of Surveys.

W. C. CAIN,  
Deputy Minister Lands and Forests.

*Appendix No. 19.*

SAULT STE. MARIE, ONT., October 31st, 1920.

SIR,—I beg herewith to submit the following report of the survey of a meridian line and a base line run during the summer of 1920 under instructions from the Department of Lands and Forests, dated May 17th, 1920.

I left Franz Station on the Canadian Pacific Railway on May 28th, 1920, with a party of twenty men, and travelled to Hudson Station by way of the Algoma Central & Hudson Bay, and Canadian National Railways. We were obliged to wait over for one day in Hearst. Hudson Station is situated on an arm of Lac Seul called Lost Lake, and consists of a small Hudson Bay Post. I was met by the Transportation Agent of the Company for that district and received the courteous assistance for which the Company is noted. We detrained at 11 o'clock in the morning of May 28th, and left the next morning at 7.30 o'clock in a York boat towed by the Hudson Bay Company freighting launch, "Ripple." We camped over night at Lac Seul Post and arrived at our point of commencement the next day at noon. My supplies had previously been taken to Pine Ridge Post 20 miles farther down the lake. The men for the freighting canoes went on to this post. The next morning the Ripple brought us back enough provisions for two weeks. We commenced work on the 30th of May and finished the 6th of September, having run 160 miles of line.

Our place of beginning was the 33rd mile post of O. L. S. Patten's meridian line of 1919, which was run north astronomically from the north-west corner of the township of Rowell. This point is on the north shore of Lac Seul. From there we ran north astronomically 87 miles to the 120th mile post of the said meridian. We then ran west astronomically 73 miles on 6 mile chords of the parallel of latitude. The first twenty miles of our meridian, namely, as far as Wenassagay River, was through green timber, the remaining 67 miles was almost entirely through a brule from eight to ten years old where fallen timber was piled three to six feet high. Our base line was also through brule for its whole length.

The freighting canoes went first up the Wenassagay River to Bluffy Lake and left a cache on an island there. They then returned to Pine Ridge Post and started out with the bulk of the supplies to Goose Lake by way of the English River, Trout Lake River, Woman River, Shabumeni (Gooseberry) Lake and Berens River. We first met them a few miles below Woman Lake. From this point to Goose Lake they brought supplies in to us from their main canoe route approximately every fifteen miles until we reached Goose Lake. From Goose Lake to Pekangekum (Dirty Water Narrows) I was able to provision the party every four or five days as the Berens River paralleled the line through this distance. The general direction of the Berens River below Pekangekum is northwesterly, and I anticipated difficulties in keeping touch with the freighting canoes. The Indian Chief came to my rescue at the last moment and acted as guide, with the result that I was able to get all my canoes to a point on the line eight miles from the end.

The party consisted of twenty-five in all, made up as follows:

- 1 Surveyor,
- 1 Assistant,
- 2 Chainmen,
- 1 Cook,

7 Axemen,  
7 Packers on line,  
6 Packers with Canoes.

This distribution varied considerably as the work progressed. Three of these men were Indians from Pine Ridge Post, and left me at Goose Lake. In going out they took two canoes and some provisions to cache for me at Pekangekum. I took on two new men at this point. From Goose Lake onwards I kept only three men with the canoes. In fact, after the first twenty miles of my work, I managed to keep at least seven men chopping on the line.

I feel that I should mention the splendid quality of the provisions which I obtained from the Wholesale Department of the Hudson Bay Company at Winnipeg, and the excellent way in which they were packed for survey work. We did not lose an ounce of provisions from any cause during the whole course of the survey.

The Indians in the Pekangekum Indian Reserve were very much disturbed by the fact that the line was heading for their lands and protested vehemently. Their Chief, in company with all the older men of the tribe, met us ten miles east of the Reserve and stayed with the party until we reached their property. We struck the southern end of it so I agreed to offset the line to avoid it. The Chief of the Tribe then acted as guide for our freighting canoes to the end of the work and sent two Indians to guide us out to Lac Seul, a trip of nine days. This was a very great help as the line was not near any main waterway and the country totally unmapped. This band of Indians is about four hundred in number and they are very primitive in their mode of living. They trade at a Hudson Bay Outpost managed by an Indian who does not speak a word of English, nor have any of the tribe any knowledge of English. They do not use money at all and gauge time by the height of the sun above the horizon; distance by the progress of the sun during a journey. This made it very difficult to obtain any information sufficiently definite to work on. In all other parts of Ontario known to myself, the Indians refer to the King as "Kitchi Ogemah," The Big Chief. At Pekangekum he is called "Wemitickiji," The Frenchman. Although they have undoubtedly been visited by missionaries, Christianity has not the slightest foothold among them, and they still hold to their native superstitions and ceremonies, such as "Wabinca," (Day Light Dance), etc. There was no evidence of tuberculosis or other disease among them. In many cases four generations were living in the same camp.

It was my intention to go out by the Berens River to Lake Winnipeg and there to take the Hudson Bay steamer to Selkirk. There is a good waterway from the end of our line to Little Grand Rapids, Hudson Bay Post on the Berens River. My ignorance of the schedule of the steamer and the danger from fifty-five unknown rapids below us on the Berens River influenced me to double back to Pekangekum and strike for Lac Seul from there. The Indian Chief supplied me with two guides to Red Lake where there is an outpost of the Hudson Bay Company, and from there we were able to follow the Dominion Government Geological map to our first destination at Hudson. I was five days in getting to my work and twelve days in getting back to Sault Ste. Marie after its completion. The expense in wages, railway fares and board in taking a large party such a distance was great. The Indians of that locality, however, work in the summer only as a pastime and could not be depended on for more than three weeks' steady work, so that this expense was inevitable.

The new system of monumenting each third mile entailed a good deal of extra work, but it is undoubtedly an excellent method of ensuring permanent record of lines in the field. I did not find the new iron posts much more difficult to handle than the old type as we were only supplied with sufficient for ninety miles, but had we taken enough for all our work, it would have necessitated employing another man with the freighting canoes. Fifty per cent. of the iron posts planted were witness posts and many of them a considerable distance



Surveyed line in Patricia.

from the true mile post, due to solid rock, muskeg, etc. We experienced considerable difficulty digging pits in the first few miles owing to frozen ground.

#### SOIL.

The only section which presents any possibilities as farming land is along the Berens River from mile 16 on the base line to mile 45. This is



fairly level land and is of good clay loam, about 250 square miles in extent. Elsewhere there are pockets of arable land but not of sufficient extent to be worthy of note. For the most part it is solid rock and swamp or muskeg. Where there is soil of any kind it is as a rule very light sand. The occasional pockets of clay loam are so thickly sprinkled with boulders as to be of no use. West of Pekangekum the country is consistently solid rock. We ran a line around two sides of a rectangle and travelled the other two by canoe. The freighting canoes went across the south half of this rectangle. From information obtained in this way and from questioning the Indians, I am practically certain that there is no land of farming value in this area except that above mentioned, with the possible exception of a narrow strip on each side of the English River from the junction of Red Lake River to Lac Seul.

#### TIMBER.

The area between Wenasagay River and Lac Seul is well timbered with spruce and jack pine, averaging about four cords to the acre each, taking the section as a whole. There is a considerable quantity of balsam here and lesser stands of birch and poplar. The north shore of Lac Seul seems to be the northern limit of white pine, red pine and cedar. There are a few scattered trees of each of these along the lake shore. North of the Wenasagay River and over all of the country included in the rectangle above described, fire has swept about eight or ten years ago. On this huge area a second growth of banksian pine is springing up in most places. Here and there a few square miles of the original stand have escaped the fire, more particularly on the clay belt referred to along the Berens River. In this section there are some small stands of large aspen and spruce, but the quantity is too small to be of commercial value. Previous to these fires the entire country has been very thickly wooded with spruce of commercial size.

#### MINERALS

With the exception of two small areas we encountered only barren Huronian formation. Two miles north of the Wenasagay River we first encountered Huronian schists and greenstones and ran through this for twenty miles. We found nothing of value in place, but found float of magnetite, pyrites and Galena. On our trip out we again encountered Huronian formation in the neighborhood of Red Lake.

#### WATER POWER.

There are no water powers of outstanding value on any of the rivers which we encountered. Those falls which might be mentioned are as follows:

1. Twin Falls, on the Wenasagay River immediately below Bluffy Lake. The upper falls could be flooded out by a dam at the lower one to give a natural head of about 50 feet. This could not be materially increased. The low water flow is about 200 c.f.s. The drainage area is about 5,000 square miles. Storage possibilities as known are poor.

2. Woman Falls, on the Berens River. The natural head is about 15 feet, and could not be increased. Low water is about 250 c.f.s. Drainage area about 600 square miles. Storage possibilities as known are poor.

3. White Dog Falls, on the Berens River. The natural head is about 18 feet. It could be increased to 28 feet. The low water flow is about 250 c.f.s. The drainage area about 600 square miles. Storage possibilities as known are poor.

4. Otter Falls, on the Berens River. The natural head is about 15 feet. It could be increased to 35 feet. Low water is about 350 c.f.s. The drainage area about 900 square miles. Storage possibilities as known are poor.

5. Mickkaime Falls, on the Berens River. The natural head is about 30 feet. It could not be increased. Low water flow is about 500 c.f.s. Storage possibilities are poor. Drainage area about 1,000 square miles.

6. Big Falls, on Trout Lake River. Natural head, 60 feet. Could be increased to 70 feet. Low water flow 200 c.f.s. The drainage area is about 900 square miles. Good storage in Trout Lake and Woman Lake.



Moose in Patricia Forest.

#### GAME.

The entire area abounds in moose, red deer and bear. Near Lac Seul and in the neighborhood of the west end of the base line there are large numbers of caribou. The Indians report a few elk. There are wolves everywhere, but

not in great numbers. The devastation by fire has reduced fur-bearing animals to a minimum. The scarcity of beaver is particularly noticeable. Partridge and ducks are plentiful.

#### FISH.

Pickereel, pike, maskinonge, whitefish and suckers are in abundance in all the lakes. Whitefish are particularly plentiful in the expansions of the Berens River below the Mickkaiaime Falls. Sturgeon are also plentiful in these waters. As far as I was able to learn there are neither brook trout or lake trout in the country.

This is my report.

I have the honour to be, Sir,

Your obedient servant,

K. G. Ross,

Ontario Land Surveyor.

*The Honourable, the Minister of Lands and Forests,  
Toronto, Ontario.*

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#### *Appendix No. 2d.*

#### SURVEY OF BASE AND MERIDIAN LINES IN THE DISTRICT OF THUNDER BAY.

SAULT STE. MARIE, ONT, September 15th, 1921.

SIR,—I beg to submit the following report on the survey of base and meridian lines in the District of Thunder Bay, run by me during the summer of 1921, under instructions from the Department of Lands and Forests dated May 17th, 1921.

I left Sault Ste. Marie by boat on May 27th, with nine Indians from Garden River and was joined by eight Indians from Chapleau at Fort William. We took the C.N. Railway to Quorn Station and were there joined by three local Indians. On May 30th, we commenced cutting line with a party of twenty-four and proceeded with the work without interruption until its completion on July 23rd. During this time we lost eight hours on account of rain.

Our place of beginning was the 72 Mile Post on O.L.S. Niven's meridian line between the districts of Thunder Bay and Kenora. From there we ran our base line east astronomically thirty-six (36) miles, and from this 36 mile post we ran our meridian north astronomically sixty (60) miles and thirty-three (33) chains to its intersection with the main line of the Canadian National Railway about two (2) miles west of Allan Water Station.

Our freighting canoes were unable to provision the party until we had run thirty miles of the base line, but from this point to the end of the work we were in close touch with them all the time, with one exception. On this occasion the party were entirely out of provisions and lived for two days on game. At



the conclusion of the work we stored our canoes with the Hudson Bay Company at Allan Water and entrained for home.

The party consisted of twenty-four in all, made up as follows:

- 1 Surveyor,
- 1 Assistant,
- 3 Chainmen,
- 1 Cook,
- 1 Cookee,
- 6 Axemen,
- 7 Packers on line,
- 4 Packers with freighting canoes.

This distribution was maintained throughout the whole course of the survey, except that where possible two or three packers were put on the line to chop.

#### SOIL.

There are no areas in the country traversed by these lines suitable for agriculture. The country is, in the main, solid rock on the surface and such soil as occurs is glacial sand and gravel covered lightly with decayed vegetable matter.

#### MINERALS.

We found no traces of valuable minerals. The formation encountered was laurentian throughout.

#### TIMBER.

From our starting point to the twenty-third mile on the base line the country has been burnt of all timber by several fires. No seeding trees have been left alive and it is covered for the most part with scrubby bushes. There is a little small spruce in some of the swamps. From this point to the end of the base line and through the first fifty miles of the meridian, the country is heavily timbered with large spruce, birch and poplar. In my opinion it extends about ten miles on each side of the meridian and forms a very valuable stand.

#### WATER POWERS.

Some rapids and falls were encountered by the freighting canoes on the water way known as Allan Water, but they were a long distance from our line and I have no data on them. The flow of water is not great but the storage possibilities are almost limitless and several of these powers might be jointly harnessed and a commercial amount of power thus carried to the railway by a comparatively short transmission line.

#### GAME.

The timbered country abounds in moose and fur-bearing animals. There are also a few red deer and caribou. Beaver are particularly plentiful. Ducks and partridge appeared to be in great numbers everywhere.



## FISH.

Pickrel, pike, whitefish, lake trout and suckers are to be found in abundance in all the lakes.

This is my report.

I have the honour to be, Sir,

Your obedient servant,

(Sgd.) K. G. Ross,

Ontario Land Surveyor

*The Honourable, the Minister of Lands and Forests,  
Toronto, Ontario.*

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*Appendix No. 21.*

SURVEY OF BASE AND MERIDIAN LINES IN VICINITY OF ABITIBI AND MATTAGAMI  
RIVERS, DISTRICT OF TIMISKAMING.

NEW LISKEARD, ONT., August 30th, 1921.

SIR,—Under instructions from the Director of Surveys, dated May 6th, 1921, our Mr. Sutcliffe and party proceeded to Smooth Rock Falls from whence they followed the Mattagami River to where same is crossed by O.L.S. Niven's base line, which was cut out in the year 1900. There was no difficulty finding this line or in reaching the 27 mile post at which our work began.

As instructed we ran a meridian line due north from O. L. S. Niven's 27 mile post for a distance of 54 miles and 12 links to intersect O.L.S. Speight's base line ran in 1911. From the 18 mile post on our meridian line we ran our first base line west 17 miles 73.50 chains to intersect O.L.S. Speight's meridian line, ran 1911, and east 5 miles 69 chains to the Abitibi River. From the 27 mile post we ran our second base line east 6 miles 48 chains to the Abitibi River. From the 36 mile post we ran our third base line west 17 miles 67.05 chains to intersect O.L.S. Speight's meridian line and east 3 miles 25 chains to the Abitibi River. From the 45 mile post we ran our fourth base line east 42.34 chains to the Abitibi River.

No serious obstacles were met with on the journey in or during the work and outside of having two canoes upset we were fortunate in not having any serious accidents to either our men or equipment. As instructed, 9 mile chords were run on the base lines, and in our field notes we have shown the true astronomic bearing for each mile as run on the ground, and while there are very slight differences from the theoretic bearings and distances, we believe that you will be well satisfied with the accuracy of the work, and we are pleased to report close checking when closing in on O.L.S. Speight's work, done in 1911.

## INSTRUMENT WORK.

Light Mountain Gurley and Ainsworth transits were used. Stellar observations were taken as frequently as possible. Our observations were all calculated, and as a check we used curves previously plotted in our office for the proper latitude and longitude of the work. These curves, without calculation, give the bearing of the Pole Star at any time to the nearest minute. Time corrections were frequently made by observation.

## CHAINAGE.

400 link chains were used and slope distances taken when necessary and corrected with the use of a clinometer and slope tables. The tapes were properly tested and the chainers were duly sworn.

## POSTS AND BEARING TREES.

The most durable wood obtainable was selected for posts. With only a few exceptions, no great difficulty was experienced in planting the iron posts. When possible, small trees were marked for Bearing trees. The trees were chosen as nearly opposite one another as possible.

## BLAZING OF LINES

One man on the party was made responsible for the blazing of the line and the results obtained were satisfactory.

## TIMBER AND SOIL.

It will be observed on the maps that the Abitibi and Mattagami Rivers drop several hundred feet in a short distance. The country lying between these rivers drops in much the same manner. This feature naturally affects the timber conditions. Above and below this drop the country is comparatively level. The upper level is a fairly good clay and mostly covered by spruce forest. In places there are areas from which good pulp wood cuts could be taken, and there are other areas on which the timber is yet too small to be of present value. The width of the area over the drop is about 15 miles. The soil here is sandy and the timber, where not touched by fire, though sometimes scattered, is large. The timber in this area consists of spruce, birch, poplar and balsam.

On the lower level the timber is also small, but we believe there are some fairly good pulp wood areas. Most of this part of the country seen by us had just recently been burned, however. We are unable to state definitely as to the exact area burned, but an approximate estimate would be between 30 and 40 square miles. We are informed that the fire commenced about June 25th and it lasted until extinguished by heavy rains on July 20th. The soil on this area is clay, with a tendency to be slightly sandy in spots, but on the whole is good. Along the most northerly portion of our meridian line the ground was very swampy and the timber, which was chiefly tamarac, small.

East of the Mattagami River there appears to be a large area that was burned years ago, which has since grown up with poplar. West of the Mattagami in the vicinity of our first base line the timber is spruce and very good.

## WATERCOURSES.

There are no streams of importance between the Abitibi and Mattagami Rivers in this vicinity. There are a few creeks which could be made navigable for canoes but our lines being so far apart we were not able to get much information concerning same. There apparently are very few lakes.

## ROCK FORMATION.

It is only along the rivers in vicinity of water falls and across the country where the drop, before referred to, takes place, that there are rock outcroppings. Along our third base line several low rock ridges were crossed and for the most part the formation is granite. Some porphyry dykes were observed. A ridge of gabbro and diorite was also crossed in the vicinity of the 11 mile post on the third base line. Quartz veins seemed very numerous in the granite but no mineral was seen.

## AGRICULTURE.

This area is within the clay belt so often spoken of. The soil is suitable for agriculture, but not before the country is burned over or the timber growth cleared away. The moss is so heavy in places that the frost remains in the ground nearly all summer. When the moss and vegetable growth are removed we have no doubt that conditions will be just as favorable for agriculture as in the more southerly portion of Timiskaming District.

## ANIMAL LIFE.

We are informed by the Indians and those who have trapped in this area that fur-bearing animals are plentiful. Among the large animals, moose and bears are plentiful. There are also a few red deer but they are not numerous. Fish are plentiful in the large streams, the principal being sturgeon, pickerel and pike.

Accompanying this report are a general plan on mounted paper, a timber plan on tracing linen and field notes of the survey on the usual forms.

I have the honour to be, Sir,

Your obedient servants,

(Sgd.) SUTCLIFFE & NEELANDS,

Ontario Land Surveyors.

*The Honourable, the Minister of Lands and Forests,  
Toronto, Ontario.*

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Appendix No. 22.

## SURVEY OF TOWNSHIP OUTLINES IN THE DISTRICT OF THUNDER BAY.

SAULT STE. MARIE, February 6th, 1920.

SIR,—I beg to submit herewith the following report in connection with the survey of certain base and meridian lines made by me in the District of Thunder Bay, under instructions from your Department dated May 1st, 1919.

I commenced my survey on May 17th, having left Sault Ste. Marie on Wednesday, May 14th, with my party of thirteen men. I ran west from the 58th mile post of O.L.S. Niven's on the district line between Algoma and Thunder Bay. This starting point was about four and a half miles north of the Canadian Northern Railway. Owing to an error in my instrument the first nineteen miles of this survey were not run astronomically west. The true bearings, however, are shown on the plan and notes, these having been obtained by observations since the survey was completed. I finished my survey on July 19th.

Durable posts were firmly planted and scribed on the south side at every mile of the survey. For each post two bearing trees were carved. At every three miles on the line iron posts were planted similarly carved to the wooden ones. The other conditions laid down in your instructions were carried out in every respect.

#### TIMBER.

The country between the district line and the White Otter River is sparsely timbered. Just west of Hillsport on the Canadian Northern Railway we ran through about four miles of brule. West of the White Otter River the country is heavily timbered with spruce, balsam, birch, poplar and scattered plains of jack pine. Spruce is the predominating timber and grows to a considerable size, running as high as two feet in diameter. On some of the ridges there are good growths of poplar and birch. Cedar is found in the swamps and along the banks of the rivers. Just before leaving this district a fire swept through, and no doubt destroyed a quantity of timber. This fire I understand began near the C.P.R. and burned through to the C.N.R., crossing this railroad at White Otter Station.

#### SOIL.

Most of the area passed over is unsuited for agricultural purposes. The soil is a whitish sand loam. The western part of the district traversed by us was quite rough and rolling. The rock outcrops were not numerous. These were gneiss on the eastern part of the base line, but on the meridian line north of the 18 mile post, a few outcrops of diabase were noticed. One of these occurs at Taradale Station on the C.N.R. No mineral was found on this survey.

#### GAME.

Moose are quite plentiful in the district and occasionally a caribou is seen. Beaver, mink and other fur-bearing animals are numerous. Pike and pickerel abound in the lakes and streams.

The average magnetic variation was 3 degrees west of north.

The length of our base line from the district boundary to the Pic River was thirty-nine miles sixty-four chains and forty-five links. Meridian lines were run nine (9) miles north and nine (9) miles south from the 18 mile post and nine (9) miles south from the 36 mile post and eleven (11) miles and twenty-eight (28) chains north from this post to the southerly limit of the Canadian Northern Railway right-of-way, which was according to the instructions issued by the Department.



Herewith I enclose a general plan of survey, timber plan, field notes, etc. All of which is respectfully submitted.

I have the honour to be, Sir,

Your obedient servant,

(Sgd.) G. L. RAMSEY,  
Ontario Land Surveyor

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*Appendix No. 23.*

NIPIGON, ONT., August 1st, 1920.

Sir,—I beg to submit herewith a detailed report on the survey of certain Township Outlines in the District of Thunder Bay, said townships lying north of the Canadian Pacific Railway and adjoining the boundary line between the Districts of Thunder Bay and Algoma, said survey having been performed by me under instructions dated Toronto, May 12th, 1920.

Pursuant to instructions, I commenced my survey at an iron post planted by O.L.S. Stewart on the line between townships 70 and 71, at the north-west angle of township 70, said point being also the north-east angle of township 71, and being 126 chains 47.9 links north of the centre line of the Canadian Pacific Railway. The meridian and base lines were run pursuant to instructions with the exception of the section of the first base line which forms the boundary between the townships of Atikameg and Bryant, which line was run from east to west, due to the position of White Lake (see plan).

The several lines were well cut out and well blazed, one man devoting his entire time to the blazing. All posts, iron and wooden, were correctly marked and planted, and the bearing trees taken wherever possible. Few cairns or stones were planted about posts, as the country was for the most part sandy, and few stones could be found for this purpose. Particular care was given to the correct marking and planting of the iron posts, the digging of pits and making of mounds.

Frequent astronomical observations were taken, the notes of which accompany the field notes. I personally took the notes on the timber and soil, the chainmen doing the actual chaining only. While on the survey I personally covered a considerable area on either side of each surveyed line to ascertain the size and extent of the timber, being particularly impressed with the large areas of spruce and banksian pine in the townships.

I beg to state that your instructions were closely adhered to in every respect. Before taking up in detail the timber, soil, etc., I may advise you that I have been informed by reliable parties that the country to the north and to the west of these townships is well timbered, that the areas of spruce and banksian pine extend in these directions, particularly to the north, and that good water routes exist whereby such timber may be driven and brought out. If it is the intention of the Department to lay out additional townships for the sale of the timber therein, may I suggest that this territory be investigated before doing so?

## TIMBER.

Throughout the six townships excellent spruce was found, running from 4 to 10 inches in diameter. There are large areas that will yield from 25 to 30 cords to the acre. It is impossible to note here the location of these areas; they exist throughout the entire six townships. Reference to the field notes and timber plan will give the locations of the best of this spruce. The townships McGill, Atikameg and Mikano are the best for spruce timber.

Banksian pine is found throughout all six townships in large amounts, excellent tie timber size. The Austin Nicholson Company, of Chapleau, under permit in previous years, has taken tie timber out from the townships of Atikameg, Bryant and Flood, but not to any considerable extent. They have merely touched the fringe of it. They have camps at present on the meridian line between the townships of Bryant and Flood. Last winter through a sub-contractor, this Company cut 87,000 ties, but were unable to get their drive out. They are at present erecting a new dam in an endeavor to get their ties out this summer. No attempt has been made to burn or dispose of the slash, and there is grave fire menace through the several townships on this account, especially as there are Indians, trappers and tourists continually passing through and camping in this area. Two rather serious fires were burning in this area during the progress of the survey, fires which I personally investigated and found not to have been started near or caused by my survey camps.

No adequate and complete report is possible on the extent of the banksian pine in these townships without a careful cruise being made. The townships are all exceptionally well timbered with banksian pine running from 6 to 18 inches in diameter. I was particularly impressed with the possibilities for a sawmill to be located near the north-east angle of the township of Bryant. Excellent roads could be made, several are actually in existence out to the Canadian Pacific Railway siding at Bremner. In view of the scarcity of, and high prices for, lumber in this district, I beg to suggest that if these townships are put up for tender, a clause be included compelling the erection and operation of such a mill.

Aside from the spruce and banksian pine, there is very little other timber in the townships. There is some large poplar and a little cedar, but not in amounts to be of commercial value. Very little balsam was found and the birch, although frequently mentioned in my field notes, was in areas small in extent and of little value.

## SOIL.

The soil throughout the six townships was sandy with occasional rocky areas and frequent small areas of muskeg. The areas near the Shabotik River and in some other places near lakes or rivers were exceptionally good, but these townships cannot be considered as good for agriculture, certainly not for settlement purposes. The value is to be found in the timber and in the timber alone.

## GAME.

The country is overrun with moose, and in the southerly two townships red deer, partridge were exceptionally plentiful. Pike found in all of the large lakes. Fishing operations under permit are now being carried on in White Lake, the main catch being whitefish.

## ROADS.

The only roads through the township are tote roads leading from the Canadian Pacific Railway to the several tie camps and connecting the said camps. These roads are shown on the field notes. The entire country is very level, with the exception of the southerly part of the township of Flood. Roads can easily and cheaply be built for logging operations in almost any part of the areas covered by this survey.

## MINERALS.

There are no minerals at all to be found on this survey. The rock where it was encountered was granite.

## LAKES AND RIVERS.

As shown on the plan, White Lake and its connecting chain of lakes, form a water boundary to the west of the townships of Bryant, Atikameg and McGill. This is a well travelled route, portages being short and well cut out. There are many lakes throughout the township, all of clear, excellent water, with sandy shores. White Lake has rocky shores for the most part. This lake extends to Mobert and the Hudson Bay Company Post at that point on the Canadian Pacific Railway.

The Shabotik River crosses the townships of Shabotik, Mikano and Atikameg in a general south-westerly direction. This is a wide, well-travelled river, although Gum Creek, one of its tributaries, shown to be a well-travelled river on existing maps, is impassable by canoes, being filled with log jams. For the information of cruisers or others wishing to investigate these townships, I would suggest starting from Mobert and paddling up White Lake to the line between Atikameg and Bryant. The townships of Bryant and Atikameg could be covered in that way. McGill could be covered by following the chain of lakes on to the north of White Lake. Shabotik and Mikano can best be covered by paddling up the Shabotik River on its north and south branches respectively. Flood could be reached by paddling up White River from the old, not the present, station of Bremner, or by taking one of the two existing tote roads that come out to the Canadian Pacific Railway near mile 18 on that railway. Should more detailed information be desired re the several routes for reaching the townships, I will be glad to supply same.

In conclusion I beg to state that your instructions have been carefully followed in respect to the survey of these townships. I have put special attention upon the notes of the timber. I was particularly impressed with the great value of the spruce and banksian pine. I beg to inclose herewith plan and field notes, timber plan, astronomical observations, etc., etc., covering the entire work.

Trusting that my work and this report upon the same will be found to be satisfactory, I beg to remain,

Your obedient servant,

M. E. CROUCH,  
Ontario Land Surveyor.

*The Honourable, the Minister of Lands and Forests,  
Toronto, Ontario.*

*Appendix No. 24.*

SOUTH PORCUPINE, ONT., December 1st, 1920

SIR,—I have the honour, in accordance with your instructions to me dated May 11th, 1920, to submit the following report on the survey of certain township outlines, north of the Canadian Pacific Railway in the District of Sudbury.

On August the 19th, my party arrived at the Woman River Station on the Canadian Pacific Railway, and the following morning proceeded down the river an approximate distance of four miles to the point where it intersects the meridian run by O.L.S. Speight in 1909. From this point part of the party proceeded north along this meridian to the 12 mile post, the starting point of the survey, the other members of the party proceeded down the river with supplies to be cached at, or near, the place where the first base line would cross the river.

The survey, which commenced on August 26th, was conducted throughout in strict accordance with your instructions. The base lines were run as chords of parallels of latitude, passing through the township corners. The east limits and west limits of townships were run north astronomically. Frequent observations were taken on Polaris, the notes of which accompany the other returns. In chaining, a clinometer was used at all times, and horizontal distances deduced from the measured slope. Distances across obstructions were measured by offset or triangulation. Many magnetic observations were taken, and the results thereof are shown in the field notes. The lines were well cut out and blazed, and posts of the specified varieties of wood were planted where required. Iron posts of the standard pattern shipped by you to Woman River Station, were planted, and the necessary pits, mounds and trenches constructed as called for in your instructions.

Unusually low water in the streams this season made transportation difficult, but this was more than offset by the ideal weather conditions.

## SOIL.

The country through the lines passed is mostly rough and hilly, but in small tracts undulating, and can hardly be classed as agricultural. The soil, except in the swamps and valleys, consists of a few inches of leafy loam and 12 to 18 inches of sand or clay on bed rock, as a rule. The swamps, like all others of Northern Ontario, have varying depths of moss and muskeg.

## TIMBER.

Approximately the western half of Dore and Garnet appears to have been burnt over six years ago, and the ground is now covered with semi-decayed fallen timber, and a new growth of small poplars and birches. The remaining portion of the territory, except in small strips along streams and lakes, apparently had been burnt over about 30 years ago, and is now covered with a thick growth of healthy timber, large areas of which are pulpwood size. A few white and red pines, survived the fires, and are now thriving apparently. The varieties of timber are spruce, balsam, white birch, poplar and banksian pine on the high lands, and cedar, small tamarac and black ash on the low lands.

## MINERALS.

The greater part of the rock throughout the country is granite and greenstone. Many small stringers of quartz were observed, but no large veins. Small



stringers of hematite were noted in several places along the line between Heenan and Fenton townships, but are not likely of any economic importance.

#### WATER POWERS.

There are three small water powers on the Ridout River within the limits of the land surveyed, and one larger power, but in a dry season like this, the amount of power that could be developed would be almost negligible.

The water in all lakes and streams is clear and pure.

#### GAME.

Large and small fur-bearing animals were numerous. Beaver work was seen in or along nearly all lakes and streams, and there were many indications of timber wolves, fox, lynx, fisher, otter and bear. Moose were very plentiful, and a few indications of red deer were observed. Partridge of different varieties were very plentiful also. The lakes and streams contain pike, pickerel, trout and whitefish.

I am submitting with this report a general township plan, a timber plan, field notes, account in triplicate and the required affidavits.

I have the honour to be, Sir,

Your obedient servant,

(Sgd.) CHAS. V. GALLAGHER,

Ontario Land Surveyor.

*The Honourable, the Minister of Lands and Forests,  
Toronto, Ontario.*

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#### *Appendix No. 25.*

PETERBOROUGH, ONT., December 10th, 1920.

SIR,—I have the honour to submit the following report on the survey of township outlines in the district of Sudbury performed by me during the past season, agreeable with your instructions of May 21st, 1920.

According to your instructions, I commenced the survey at the north-west angle of the township of Strathearn, from this point I ran due north astronomically twelve miles, this line being the west boundaries of the townships of Hill and Ramsden. From the north-west angle of the township of Hill I ran the south boundary of the township of Buckland due west astronomically to the north-east angle of township number thirty-seven, and from this point I ran the line between the townships of Buckland and Delmage north astronomically six miles. From the latter point I ran west astronomically six miles to the north-west angle of the township of Delmage. I then returned to the north-east angle of Delmage and ran the north boundaries of Buckland and Ramsden due east astronomically twelve miles. I then proceeded to the north-west angle

of the township of Hill, and ran the north boundaries of Hill and Marshall and the east boundary of Ramsden. I then ran the east boundary of Mageau north six miles. From this point I returned to the north-west angle of the township of Mageau, and ran the north boundaries of Mageau and Racine. After completing this line, I ran to the south-west angle of Mageau township. From this point I ran the east boundary of Hill south six miles and picking up the northern boundary of Strathearn I ran east to the north-west angle of the township of Cochrane, thus completing the survey allotted to me.

As to the general character of the country through which these various township outlines pass, I may say that it is evident that all this section was swept clean by fire about the year 1865, and it is also evident that since that date other fires, evidently not so destructive, have swept through this particular section. All this country is now grown up with poplar, white birch, banksian pine and spruce, running up to eight and ten inches in diameter, and generally speaking, very thick underbrush of various kinds.

This country is very rolling and rocky, made up practically of a continued series of high hills and deep valleys, making the work of cutting lines very slow and laborious indeed. Along the north boundaries of the townships of Buckland, Ramsden, Mageau and Racine, and extending from one to three miles southerly, the country is more of an undulating character, with larger timber, consisting of spruce up to ten and twelve inches, poplar, yellow birch, white birch, balsam and banksian pine up to fifteen inches and a few scattered white pine up to thirty-five inches. All the country passed over by me is very rocky and I am sorry to report totally useless from an agricultural standpoint. An exceptionally large number of lakes of various sizes were met with, interfering greatly with the progress of the work. The shores of these lakes are, generally speaking, high and rocky, and the water pure and good. The fishing, however, was not found to be even fair. I found the deflection of the magnetic needle to average five degrees west of the astronomic north and although fluctuating considerably at many points, no mineral deposits were seen or found.

The only game noticeable in this country are moose, which are fairly plentiful throughout this entire section. Astronomical observations for the purpose of verifying the courses of the lines were taken whenever practicable, returns of which will be found on the proper pages of the field notes. The iron posts supplied by the Department were placed and the pits and mounds made at the exact points or as near the exact points as possible.

Accompanying this report I also beg to submit the field notes, a general plan showing the topography of the country. Also timber plan, etc., all of which I trust will be found complete and satisfactory to the Department.

I have the honour to be, Sir,

Your obedient servant,

J. W. FITZGERALD,  
Ontario Land Surveyor.

*The Honourable, the Minister of Lands and Forests,  
Toronto, Ontario.*

*Appendix No. 26.*

NORTH BAY, ONT., June 8th, 1921.

SIR,—In accordance with your instructions dated May 11th, 1920, we have made a survey of certain township outlines in the District of Sudbury, and beg to submit the following report.

The starting point for this survey was at the fourth mile post between the townships of Cavell and Carew. From this point we ran our first meridian two miles north astronomically, where a wooden and iron posts were planted to indicate a corner of Cavell, Carew, Fingal and Edith townships. We continued this meridian north astronomically six miles, one chain and fifty and one-half links for the west boundary of the township of Fingal.

From the iron post planted to indicate the south-east angle of Edith township, we ran our first base line west astronomically on a six mile chord a distance of six miles and twenty-two links to intersect the east boundary of Township 16. This intersection is two chains and ninety links south of the north-east angle of said Township 16.

From the iron post planted to indicate the south-west angle of Fingal township, we ran our second base line east astronomically on six mile chords a distance of twelve miles to form the south boundary of Fingal and Arbutus townships.

From the sixth mile post on this second base line we ran our second meridian north astronomically, twelve miles and ninety-nine links to intersect base line run by C. V. Gallagher, O.L.S., during the season of 1920. The posts at this intersection were planted by him as we had arrived at this point some time previously.

From the sixth mile post on this meridian number two, we ran our three base line east astronomically on a six mile chord a distance of six miles, one chain and forty-one links to its intersection with meridian number three, which was then run from the twelfth mile post on base line number two. This meridian number three was run eleven miles sixty-four chains and thirty-one links to intersect the south boundary of the township of Frater. This intersection was made twenty chains, seven and seven-tenths links east of the first mile post on the south boundary of said township.

We then ran our base line number four from the sixth mile on meridian number two west astronomically on six mile chord, a distance of six miles, one chain and forty-seven links to its intersection with meridian number one.

## GENERAL CHARACTERISTICS.

The area embraced by this survey is rolling land with a large percentage of the acreage in spruce, tamarac and cedar swamps, and a few open, marshy areas. Almost the entire area was fire swept, which probably occurred during the construction of the Canadian Pacific Railway.

Through the townships of Arbutus and Huffman are several lakes and streams, which have been and are being used as canoe routes northerly from Biscotasing.

## SOIL.

The soil is sandy throughout the area. The swamps have moss and mulch overlying the sand.

## TIMBER.

The timber is small, due to being fire swept. A few scattered areas have timber of commercial size, but a fine harvest of lumber is growing, which will be a valuable asset in fifteen or twenty years.

## ROCK.

Very few outcrops of rock were encountered. No contacts were observed nor economic mineral discovered.

## GAME.

Large game is plentiful. Tracks of moose, red deer, and bear, were seen daily. Small fur is also there, and from reports, trapping has been carried on extensively.

Accompanying this report are plan, field notes, accounts, etc., all of which are respectfully submitted for your approval.

We have the honour to be, Sir,

Your obedient servants,

McCAUSLAN & ANDERSON,

Ontario Land Surveyors.

*The Honourable, the Minister of Lands and Forests,  
Toronto, Ontario.*

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*Appendix No. 27.*

TORONTO, January 20th, 1921.

SIR,—We have the honour to submit the following report on the survey of certain township outlines north of the Canadian Pacific Railway in the District of Sudbury, made by us during the past summer, under instructions from your Department dated 21st May, 1920.

Upon the receipt of the instructions, arrangements were made for the organization and equipment of the necessary party, and on the 15th of June a party was assembled at Dalton, on the Canadian Pacific Railway. The following day a search was made for the iron post planted in 1893 by O.L.S. Stewart, to mark the intersection of the line between townships 42 and 43 with the northerly boundary of the Canadian Pacific Railway. This post has disappeared but a post planted at that time by Mr. Stewart to the south of the Canadian Pacific Railway right of way was found in position, and by measuring northward a small mound of stones was found around what had been the site of the post sought for. A substantial wooden post was planted by us, in lieu of the missing monument, and a cairn of stones built around it.

An observation for azimuth having been obtained, the survey was commenced the next day by extending northward the line between townships 42



and 43. At a distance of 57 chains and 69 links from the point of commencement, an iron post was planted to mark the chainage of three miles from the south boundaries of the townships. Standard pits were dug to the north and south and a wooden post was planted as required by your instructions. From this post we continued north on the line between townships 42 and 43 to the line run by O.L.S. Stewart delimiting the north boundary of township 43. The iron post planted by him was found 8 links west of our line. A standard iron post with pits and mounds, was planted at the intersection and the old post was removed. From this corner we ran east along the south boundary of township 44. The party then returned to the south-west corner of township 44 and ran the line between townships 44 and 45 north, to the intersection with the north boundary of township 45 as defined by O.L.S. Stewart. Mr. Stewart's post was found 7 links west of our line. It was removed, and one of the standard posts was planted at the intersection.

Dog Lake intersects the west boundary of the township of Stover about one mile north of the south-west corner of the township, and the boundary line was carried across the lake before we proceeded to run the boundary between the township of Stover and township 44. We ran east a distance of six miles to the township corner, which lay in a small lake, locally known as Ruby Lake. The iron post, properly marked and monumented, was planted three chains south of the true corner of the line between township 44 and the township of Lang. Wooden posts were planted at the intersection of the township lines with the north, east and west shores of the lake. From this corner we ran the line between the townships of Stover and Brackin north to Crooked Lake and the boundary between the township of Brackin and Lang east to Missinaibi Lake. We then proceeded south along the boundary between township 44 and the township of Lang to intersect the south boundary of township 44, run by us. The south boundary of the township of Lang was then run easterly six miles. Returning we picked up the north boundary of the township of Lang on the west shore of Missinaibi Lake and continued it east to chainage six miles.

We then ran south to intersect our south boundary of the township of Lang. As the intersection came on bare rock, the corner was marked by a cross chiselled in the granite and the iron post was planted on the south boundary of the township of Lang three chains west of the true corner.

Returning to the north east corner of the township of Lang, we ran north, delimiting the east boundary of the township of Brackin. The south shore of Missinaibi Lake was reached at a chainage of about two miles and a quarter, and with the exception of the crossing of the island of Reva and another small island, the rest of this boundary lies in Missinaibi Lake. The chainage was carried forward by a triangulation based on the west shore. Having established the line on the north shore of the lake, we proceeded via Crooked Lake and Dog Lake to the west boundary of the township of Stover on our way running the remainder of the line between the townships of Stover and Brackin. The west boundary of the township of Stover was carried northward to the corner of the township and the line continued northward along the west boundary of the township of Rennie to O.L.S. Niven's base line of 1900. We then returned to the south-west corner of the township of Rennie and ran east between the townships of Rennie and Stover to the east boundary of the township of Stover. From the intersection the boundary between the townships of Rennie and Leeson was run north to O.L.S. Niven's line and the boundary between the townships of Leeson and Brackin east to Missinaibi Lake and the east boundaries

of these townships. The east boundary of the township of Leeson was then continued from the point established on the north shore of the lake to O.L.S. Niven's base line, thus on the 3rd of September completing the survey.

All the east and west lines were run as chords of the parallels of latitude, passing through the corners of the respective townships. Frequent observations were taken on Polaris throughout the survey. The notes of a number of these accompany the field notes.

All lines were well opened out and carefully blazed. Where possible, cairns of stones were built about the posts planted and, except in a few instances where recent fires had laid bare the country, each post was referenced to two bearing trees. Wooden posts were selected from the most durable material available in the vicinity of each mile post and the posts themselves firmly planted. Great care was taken to plant the iron posts in the most workmanlike manner possible, and every effort was made to so dig the trenches and pits that they would comply fully with your instructions and be permanent witnesses as to the positions of the posts.

#### GENERAL FEATURES.

The area embraced in these townships lies mostly to the north-east of the height of land, but township 44 and parts of the townships of Lang and Stover drain southward to Lake Superior. The other townships are drained by the head waters of the Missinaibi River, Dog Lake, Crooked Lake and Missinaibi Lake form an excellent canoe route across the centre townships and numerous other small lakes crossed by our lines.

The surface is hilly throughout, and the township of Lang and the south-west part of township 44 are decidedly rough.

In the northerly two townships, considerable areas of cedar swamp were encountered. We are not in a position to say, however, whether the length of the swamps where crossed by our lines is really indicative of their extent throughout the townships. These swamps represent the only possibilities of the land from an agricultural standpoint, as elsewhere the country is a succession of rock and granite ridges, absolutely unsuited to agriculture.

#### TIMBER.

Part of the forest south and west of the height of land has recently been lumbered. Messrs. Austin and Nicholson have a tie camp in operation near mile 5 on the south boundary of the township of Lang, and some thousands of ties had also been taken out during last winter from the country adjacent to Dog Lake.

Between Crooked Lake and Missinaibi Lake, in the townships of Lang and Brackin, there is apparently a very considerable area of good jack pine and spruce and various other smaller stands were crossed by our lines. Probably not more than 35 per cent. of the area of the townships surveyed has escaped fire within the last fifty years. About 40 per cent. of the township of Lang was burnt over, apparently about twenty years ago, and an extensive area north of Crooked Lake suffered about the same time. Both these areas are now largely covered by a dense growth of young jack pine.

The rapid strides now being made in the development of the air ship and aeroplane suggest that in the near future it may be possible to supplement the information gained from a township outline survey by air photographs of the

interiors of the townships. This should give a good general idea of the actual value or otherwise of the timber within the area covered, besides furnishing data for the charting of waterways, etc.

#### WATER POWER.

As the height of land runs through these townships, the streams are insignificant, and there are no water powers capable of development within the area surveyed.

#### MINERALS.

A considerable variety of rock was met with, especially in the southerly townships, and while no precious or economic minerals were seen, thorough prospecting may reveal deposits of value. During the summer, nickel was reported south of Dalton, but the extent or value of the find is unknown.

#### GAME.

Moose were seen at various times, and signs of bear and beaver noted. Pike and pickerel were plentiful in the streams and lakes. Lake trout are said to be present in Ash Lake. In general, however, the game is not so plentiful as in some other districts of Northern Ontario, owing probably to persistent hunting and trapping by Indians and others from Missinaibi.

We have the honour to be, Sir,

Your obedient servants,

SPEIGHT AND VANNOSTRAND,  
Ontario Land Surveyors.

*The Honourable, the Minister of Lands and Forests,  
Toronto, Ontario.*

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#### *Appendix No. 28.*

PEMBROKE, ONT., February 7th, 1921.

SIR,—I have the honour to submit the following report of the survey of certain township outlines in the District of Sudbury, made by me under instructions from your department, dated May 12th, 1920.

I left the Canadian National Railway at Foleyet Station with my party, using wagons to move my outfit about seven miles over a good portage road to the north end of Ivanhoe Lake, and proceeded up the lake to the meridian run by T. B. Speight, O.L.S., in 1909, and finding witness post planted by him at forty-two miles plus ten chains, I chained south on his meridian and established the corner of Carty and Pinogami Townships, then from observations I ran my first base line west astronomically a distance of five miles and seventy-nine



chains and sixteen links, and planted iron and wooden posts with mounds and pits, establishing the corner of Evans, Warren, Carty and Pinogami townships. From this corner I continued my first base line west, establishing the line between Warren and Evans townships, and then, returning to township corner above referred to, I ran my first meridian north to intersect base line by O.L.S. Speight, and south astronomically a distance of six miles, establishing the corner of Evans, Pinogami, Biggs and Hellyer townships, from which I ran my second base line east to Speight's meridian and west astronomically a distance of six miles, establishing the corner of Sandy, Murdock, Evans and Hellyer townships, this being the starting point of my first meridian, and continued west on my second base line to intersection with the east boundary of the township of Chewitt. I then returned to my second meridian and ran north to intersection with my first base line and continued to intersection with the south boundary of the township of Paul, then returning to my second base line, I ran south on my second meridian between Sandy and Hellyer townships. Returning to my first meridian, I ran south astronomically between Hellyer and Biggs townships a distance of six miles, establishing the point of commencement of my third base line, and continued south between the townships of Raney and Rollo to intersection with base line run by O.L.S. Young, 1920, I then returned to point of commencement with my third base line, and ran east astronomically to Speight's meridian, and west to intersection with my second meridian, and continued west to intersection with the east boundary of the township of Gamey. I then returned to my second meridian and produced it south to intersection with O.L.S. Young's base line already referred to, establishing the boundary between Crockett and Raney. Base lines were all run on chords of latitude and frequent observations for azimuth were taken and recorded in field notes. Wooden posts were planted at every mile and iron posts, pits and mounds planted, and bearing trees taken where specified in instructions. Where posts and monuments could not be established at exact chainage, witness posts and monuments were established as shown in the field notes.

#### SOIL.

We did not encounter any land suitable for agricultural purposes; the soil is either sandy or gravel with boulders, and occasional outcrops of rock. The surface is generally rolling, with comparatively small level areas of swampy land.

#### TIMBER.

Forest fires have destroyed the timber over a large portion of area covered by this survey. All of the townships of Crockett, Raney, Rollo and all of Biggs excepting a small triangle in north-west corner of the township; that portion of Hellyer lying south of a line drawn from fourth mile post in west boundary to the second mile post on east boundary, and being now covered by dense growth of jack pine, poplar and white birch from two to six inches in diameter. This old brule also extends into south-east corner of Pinogami. A considerable quantity of jack pine and spruce of commercial value is to be found in the north-west portion of Hellyer, the south-east half of Evans, that portion of Pinogami north-west of Ivanhoe Lake and a strip from one to one and one-half miles in depth along south-east side of the lake, and the south and east part of Carty township; a few scattered areas of white and red pine were seen along banks of Ivanhoe Lake in Pinogami township. In the townships of Sandy, Murdock and



Warren, the north-west portions of Evans and Carty, there are scattered areas of jack pine and spruce, but timber is usually too small at present for commercial purposes.

#### MINERALS.

No indications of economic minerals were found.

#### STREAMS AND LAKES, ETC.

What was known as the Pishkanogama Route from Ridout Station on C.P.R. passes through south-east corner of Crockett township to south end of lake formerly known as Pishkanogama Lake, now called Ivanhoe. This lake is navigable through townships of Hellyer and Pinogama, but is now about fifteen feet lower than its original level, due to a washout at north end of lake, but I understand surveys are being made to build a dam which will restore lake to within about five feet of its original level. On both sides of this lake the hills rise to a height of from one hundred and fifty to two hundred feet, with a thick growth of timber in Pinogami township.

There are a number of inland lakes of considerable size in townships of Raney, Rollo, Warren and Carty. There is a canoe route from Ivanhoe Lake through Hellyer and Sandy townships to Trout River, but stream is shallow and not much used.

There are no water powers capable of development. Ivanhoe Lake can be used for storage purposes.

#### GAME

Moose and game are plentiful, and there are many beaver colonies throughout the whole area. Speckled trout up to one and one-half pounds were taken in Raven River, Township of Murdock, and I understand are found in lake in south-west corner of Warren township.

Generally speaking, the area covered by this survey is valuable only for its timber reserves and will be of considerable value as a source of pulpwood if fire is kept out and young timber allowed to mature.

Accompanying this report are a plan, field notes, timber plan, with usual affidavits and accounts in triplicate.

I have the honour to be, Sir,

Your obedient servant,

HERBERT J. BEATTY,

Ontario Land Surveyor.

*The Honourable, the Minister of Lands and Forests,  
Toronto, Ontario.*

*Appendix No. 29.*

PEMBROKE, ONT., February 18th, 1921.

SIR,—In accordance with instructions from your Department, dated the 12th of May, 1920, I have surveyed certain township outlines in the District of Sudbury, and have the honour to report thereon as follows:

I proceeded to Ridout Station on the Canadian Pacific Railway arriving on the 13th of June, and spent a few days hiring men from various points, finally on the 15th of June, with two O.L.S. assistants and a full party, I was ready to proceed with the survey.

The post from which I was instructed to commence my survey had become obliterated, but after considerable searching I located the iron post in a cairn of stone, planted by O.L.S. John McAree in 1902, on the south side of the Canadian Pacific Railway right of way, marked "R" on the north side; XXII on the east side, and XXIII on the west side. At this point I took an astronomical observation from azimuth, and upon measuring north from this point one chain and fifty-six and two-tenths links (1 ch. 56  $\frac{2}{10}$  lks.), the distance shown in McAree's field notes, across the Canadian Pacific Railway right of way, I located a cairn of stone, but no post. At this point I planted a spruce post and then ran my first meridian north astronomically between townships XXII and XXIII, a distance of three miles, fifty-eight chains and twenty-six and six-tenths links (3 m. 58 ch. 26  $\frac{6}{10}$  lks.), where I planted an iron post in the prescribed manner establishing the corner of townships of Tooms and Greenlaw, being the point of commencement of my first base line, which I ran west between townships XXIII and Tooms to the intersection of the northerly production of the line run by Ontario Land Surveyor McAree in 1902 between townships XXIII and XXIV, thus establishing the north-west angle of township XXIII and the south-west angle of township of Tooms. From this point I ran north astronomically between the townships of Tooms and XXIV to the intersection of the south boundary of the township of Lackner. My first meridian was continued north between townships of Tooms and Greenlaw, and my first base line was run east along south boundary of Greenlaw a distance of six miles, where I established the corner of Greenlaw, Cunningham, number XXI and number XXII, being the point of commencement of my second meridian, and I continued my base line along south boundary of Cunningham to intersection with Speight and vanNostrand's meridian at a point three chains and fifty-two links (3 ch. 52 lks.) north of his XII M.P. Returning to point of commencement of second meridian, I ran north astronomically a distance of six miles, establishing corner of Greenlaw, Denyes, Swayze and Cunningham, the point of commencement of my second base line, and continued this meridian north between townships of Denyes and Swayze. Returning to the second base line, I ran east astronomically between the townships of Swayze and Cunningham to intersection with Speight and vanNostrand's meridian at a point six chains and fifteen links (6 ch. 15 lks.) north of his XVIII M.P. I then ran west astronomically on my second base line between the townships of Denyes and Greenlaw to intersection with my first meridian, and continued west astronomically between the townships of Halcrow and Tooms to intersection with the west boundary of the township of Lackner. I then returned to my first meridian and produced it north between the townships of Halcrow and Denyes to a point distant twelve miles from my first base line, establishing the north-east angle of Halcrow and the north-west

angle of Denyes, the point of commencement of my third base line, from which I ran west astronomically along the north boundary of Halcrow to the east boundary of the township of Gamey. Returning to my first meridian, I ran east astronomically along the north boundary of Denyes township to intersection with my second meridian, and continued east astronomically along the north boundary of Swayze to Ontario Land Surveyors Speight and vanNostand's meridian, completing the field work of my survey.

All lines were run with the transit as true meridians or chords of latitude, passing through the township corners. Frequent astronomic observations were taken and recorded in my field notes. The measurements were taken with a two chain type and on sloping ground the clinometer was used. The lines were posted in accordance with instructions and iron posts of the new style were planted and witnessed by pits and mounds in the prescribed manner.

#### PHYSICAL FEATURES.

The entire area covered by the survey is undulating or hilly country, with many rock outcrops. The Ridout River, a sluggish stream from twenty-five to fifty links wide, flows north-easterly from Ridout Station on Canadian Pacific Railway in township XXIII, across the north-west corner of township XXII, and is joined by the Wakami River, a larger stream about one chain in width in the township of Greenlaw, and continues north-east through the north-west corner of the township of Cunningham and the south-east corner of Swayze. This river is navigable with a canoe, but is very crooked, and there are five short portages between south boundary of Greenlaw and junction with Wakami River. From the junction north the stream is from a chain to two chains wide, with a fair current and two short portages in the township of Cunningham. There is another small river flowing northerly through the township of Tooms, Halcrow and the north-west corner of Denyes; this river is also navigable with a canoe, but is quite shallow. The lakes are very numerous, some of which are of considerable size, as shown on my plan.

#### TIMBER.

The only timber of commercial value met with is in a small area comprising the north-west quarter of Greenlaw, the north-west quarter of Tooms and a small portion in the south-east quarter of Halcrow and part of the south-west quarter of Denyes. In this area there is some very good jack pine from six to fourteen inches in diameter, with spruce, birch, poplar and balsam of good size. With the exception of a few swamps in which there is green timber of spruce and cedar, from six to twelve inches, the balance of the area covered by the survey is an old brule, densely grown up with small jack pine, birch and poplar, ranging from two to five inches in diameter, which, if the fire is kept out, will make a valuable forest in the future.

#### SOIL.

I am convinced that there is no agricultural land within the whole area. The soil is of a light sandy nature, strewn with stones and boulders. In the swamps there is generally about a foot or two of black muck covering boulders.

## MINERALS.

No economic minerals were seen though on the line between Swayze and Cunningham, in the first mile and in the fifth mile, as shown in my field notes, I intersected mining claim lines.

## GAME AND FISH.

Moose are very plentiful and an occasional red deer was seen. Most of the lakes and streams are inhabited with beaver. Small game is said to be numerous and trapping in this country is quite profitable. The only fish caught were pike and pickerel of a fair size; they seem to be quite plentiful in all the streams and lakes of any size.

## WATER POWER.

In the northerly part of the township of Cunningham, there is a falls on the Ridout River of about twenty feet, but the shores of the river are low and storage would be poor. There is another falls of about thirty feet in the township of Halcrow, but owing to the low water, flow being small in volume, neither of these are of value without storage, and an estimate of horse power available could only be made after a careful survey to ascertain drainage area, etc.

Accompanying this report are a general plan, a timber plan, field notes of the entire survey and the usual affidavits and accounts in triplicate.

I have the honour to be, Sir,

Your obedient servant,

A. C. YOUNG,

Ontario Land Surveyor.

*The Honourable, the Minister of Lands and Forests,  
Toronto, Ontario.*

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*Appendix No. 30.*

SURVEY OF TOWNSHIP OUTLINES ALONG THE WAGAMACIE RIVER, DISTRICT  
OF TIMISKAMING.

OTTAWA, October 14th, 1921.

SIR,—In accordance with your instructions dated May 12th, 1920, I proceeded to run certain township outlines west of the Ground Hog River, and south of the National Transcontinental Railway.

My assistant, Mr. Fred Webster, left Ottawa on June 3rd, and had our party in readiness for me when I arrived in Fauquier on June 10th. On June 11th, we started up the Ground Hog River, later entering the Wagamacie River. The latter river is for the most part quite shallow and very rapid at that time of the year, and it was with considerable difficulty that we were



enabled to reach Wagamacie Lake. This lake is about three miles long, and one and one-half miles wide. We followed the river southerly till we came to Sutcliffe and Neeland's meridian, run in 1919, and followed this line northerly till we came to the thirty-three mile post on the Seaton-Griffin meridian. We continued this line northerly three miles to the township corners. We then ran the Seaton-Fenton chord and the Slack-Griffin chord, after which we continued the Fenton-Slack meridian.

After seeing the Griffin-Slack Chord well started, I had to return to Ottawa, as I had received on the day of my departure, a subpoena to appear as Engineer in a case which was coming up for trial shortly. On my arrival in Ottawa I immediately secured the services of J. E. Lyon, O.L. Surveyor, and sent him up to my party, and reported the proceedings to the Department. Just after I left I sent in another man for the party, and he brought tales of fabulous wages being paid for men, with the result that half the party left. My assistant, Mr. Webster, came out and replaced these, and the work went on.

Arriving at the Fenton-Staples, Casselman-Slack corner, the party ran east to the Wagamacie River, where we had our main cache. This cache was then moved west to the township corners, and after dividing the party, Mr. Lyon ran west on the Fenton-Staples chord, and Mr. Webster ran north on the Staples-Casselman meridian.

After going some distance, they sent back for more provisions, and found that our cache had been completely cleaned out by bears. Mr. Webster then ran as far as he could on the available grub, i.e., one and three-quarter miles west on the Staples-Sulman chord. He then returned and ran east of the Wagamacie River a day's run, to the six mile post and came out.

Mr. Lyon got as far as Lake Saganash, and after losing considerable time trying to get suitable triangulation points, returned when his grub gave out, and came to Fauquier about August 20th. As it was impossible to get any men to return, they came to Ottawa.

After it froze up in November, I sent a small party in, but they were unable to finish the work. In June, 1921, we again went in, finishing our contract on July 17th, 1921, by completing the Fenton-Staples Chord, the Slack-Casselman Chord, the Staples-Sulman Chord, and the Shanly-Staples Meridian.

The country traversed, with the exception of the northerly boundary Staples, is low, wet country, covered with mixed timber of fair quality, about thirty per cent. of which is over eight inches in diameter, and suitable for lumbering, while the remainder is fair pulp wood.

The north boundary of Staples is high, undulating land, and has been burnt over at one time. At present it is covered with small, second growth timber of little value. This brule covers part of the Staples-Casselman Meridian, but the timber is poor. The brule also extends along the Shanly-Staples Meridian, where the timber is somewhat better on the first and seventh miles, the remainder being of little or no commercial value.

The soil is mostly clay or clay loam subsoil, covered with decayed vegetable matter, and moss.

No economic minerals whatever were encountered.

During 1920 the country was absolutely infested with bees and wasps, as many as forty-four nests in six miles on the Fenton-Seaton chord having to be removed from the line. This was our chief factor in holding up the work.

Frequent observations were taken during progress of the work, in fact, every time it was possible to do so, one was taken.

Plans and field notes of the work are being forwarded.

All of which is respectfully submitted.

I have the honour to be, Sir,

Your obedient servant,

(Sgd.) N. B. MACROSTIE,

Ontario Land Surveyor.

*The Honourable, the Minister of Lands and Forests,  
Toronto, Ontario.*

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*Appendix No. 31.*

SURVEY OF TOWNSHIP OUTLINES IN THE DISTRICTS OF SUDBURY AND ALGOMA.

PETERBOROUGH, December 2nd, 1921.

SIR,—I have the honour to submit the following report on the survey of township outlines in the Districts of Sudbury and Algoma, performed by me during the past season under instruction from your Department, dated April 15th, 1921.

I commenced the survey at the one hundred and eight mile post on Ontario Land Surveyor Alexander Niven's base line, surveyed during the seasons of 1899 and 1900, which point is about 15 miles south-west of Peterbell Station, on the Canadian Northern Railway. After taking the necessary observations for latitude and azimuth, I ran due south astronomically twenty-four miles to the north boundary of the Township of Mageau, surveyed by me during the season of 1920. All this line passes over a very rough and rocky country, heavily timbered with spruce, poplar, banksian pine, white birch and cedar. The land along this line is totally unfit for cultivation. The country traversed over is, however, very valuable and contains an immense quantity of pulpwood.

Having completed the above meridian line, I proceeded to the north-west angle of the township of Pattinson, and produced the west boundary of that township due north astronomically six miles, being the boundary line between the townships of Floranna and Sadler. The country passed over on this line is very similar to that already described, i.e., rough and rocky, and heavily timbered with spruce, poplar, banksian pine, white birch and cedar, with alder and willow scrub, and a large quantity of windfall.

On the completion of this line I moved to the south-east angle of the township of Sadler, from which point I ran north astronomically six miles, being the boundary line between the townships of Sadler and Alcorn. The country along this line is rough and rocky, and is timbered with spruce, banksian pine, balm of Gilead, balsam, white birch and cedar, the spruce, cedar and balm of Gilead running up to sixteen and eighteen inches in diameter. There is very little of what is usually termed agricultural land along this line.

After completing this line, I proceeded to the south-west angle of the township of Lincoln, from which point I ran due west astronomically on nine mile chords along the line between the townships of Copperfield and Lipsett on the north, and Floranna, Sadler and Alcorn on the south, a distance of about twenty-one miles, where I intersected my first meridian line. The character of the country along this line is very similar to that already reported upon—rough and rocky, and very heavily timbered.

Having completed the above line, I came east to the south-east angle of the township of Lipsett, and south-west angle of the township of Copperfield, and ran the boundary line between these two townships north astronomically to the south-west angle of the township of Bonar, from which point I ran the line between the townships of Lloyd and Lipsett due west astronomically to intersect Ontario Land Surveyor Speight's meridian line surveyed during the past season. The country along the north and west boundaries of Lipsett is much the same as that already reported upon—all rough, and with the same varieties of timber.

Having completed the lower part of the work, I moved my camp and outfit to the iron post planted by Ontario Land Surveyor Speight on his meridian line six miles north of Ontario Land Surveyor Niven's base line, from which point I ran due west astronomically on nine mile chords along the south boundaries of the townships of Conking, Nebotik, Makawa and Moorehouse. In all a distance of thirty-six miles, where I intersected the east boundary of the township of Simpson, three chains and eighty-three links north of the south-easterly angle of said township. All the country traversed by this line is rough and rocky, and is of little or no agricultural value. The easterly twenty-five miles is heavily timbered with spruce, banksian pine, white birch, balm of Gilead, poplar, balsam and cedar, running up to eighteen and twenty inches in diameter, and in some places with a dense undergrowth of alder and willow. Along this part of the line there are also a few scattered red and white pine, running up to thirty inches in diameter. The westerly eleven miles of the line is through a country that has been frequently swept over by fire, and commonly called "brule country." This tract is covered with the usual small scrub which follows a fire, white birch, poplar, banksian pine, etc., up to four and six inches in diameter, with alder and willow underbrush.

Observations for latitude and azimuth were taken very frequently, all the work closing very satisfactorily. Wooden posts were planted at the end of each mile and iron posts every three miles, according to instructions. All the pits and mounds were made very carefully and where it was not possible to construct these properly, which was quite frequently the case, owing to the rocky nature of the country, a witness post was planted and witness mound, etc., constructed according to instructions. The lakes, rivers and streams, which are all numerous in this country and crossed by the various lines, contain good pure water and an abundance of the usual kinds of fish. Game appears to be very plentiful, particularly moose, which could be seen almost daily, and in spite of centuries of trapping, the beaver, otter, fisher and mink are still very numerous. Nearly all the country passed over by me this season is very rich in pulpwood, but I am very sorry to say, very poor from an agricultural standpoint. The variation of the magnetic needle averages from three to five degrees west of north, but it is a very uncertain quantity.

Accompanying this report are field notes of the survey, a map of the township outlines and a timber plan, all of which I trust will be found complete and satisfactory.

I have the honour to be, Sir,

Your obedient servant,

(Sgd.) J. W. FITZGERALD,

Ontario Land Surveyor.

*The Honourable, the Minister of Lands and Forests,  
Toronto, Ontario.*

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*Appendix No. 32.*

LITTLE CURRENT, ONT., January 31st, 1921.

SIR,—I have the honour to submit to you the following report on the survey of Lake Penage and part of the Whitefish River, including Walker Lake, Bear Lake and Long Lake, to the east limit of the Whitefish River Indian Reserve, according to instructions from your Department dated Toronto, May 4th, 1920.

Having proceeded from Little Current by train on 1st July, and canoe, from Willisville, situated on the first lake up the Whitefish River, I arrived at the east limit of the Whitefish River Indian Reserve on Long Lake on Saturday evening, July 3rd.

Commencing at the said east limit of Whitefish River Indian Reserve, the work was continued with very little interruption and completed on the 9th of September. We arrived back at Little Current on the 11th of September.

With only one or two exceptions, all posts planted were of cedar, not less than 4 inches square; in most cases they are 5 inches, some are six inches, and properly marked. Every post, with only one or two exceptions, is mounded up with stones, forming a cairn, which at nearly every post has a base of five feet, and about two feet high. Where a post was merely driven, it is noted in the traverse. All posts were also planted well above the flood water, caused by damming the lakes in river driving.

On Lake Penage a careful triangulation was made throughout from several bases, which were measured and remeasured with a steel tape. Stadia readings were made on several of the triangulated distances, a table of which I have shown in the notes, with the resultant difference. In plotting my work across Berths 90 and 91, I was obliged to apply this difference in order to close reasonably with the recorded measurement of the line between those Berths.

In several places, where no other check was available, the measurements were carefully duplicated and compared.

Posts were planted on all islands, except on small, bare rocks where no loose stones were available to mound them, and properly marked and their



position is shown approximately on the traverse sheet. There were planted also posts about a mile apart on the shores and numbers cut thereon as shown in red on the traverse sheet.

I have the honour to be, Sir,

Your obedient servant,

T. J. PATTEN,

Ontario Land Surveyor.

*The Honourable, the Minister of Lands and Forests,  
Toronto, Ontario.*

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*Appendix No. 33.*

SURVEY OF THE SOUTHERLY PARTS OF THE GROUND HOG AND KAPUSKASING  
RIVERS AND TRIBUTARY STREAMS AND LAKES, DISTRICTS OF  
SUDBURY AND ALGOMA.

COBALT, ONT., February 1st, 1921.

SIR,—In obedience to your instructions dated May 2nd, 1919, and further instructions of May, 1920, to traverse certain lakes and rivers in the Districts of Sudbury and Algoma, I have continued the work, and beg to report as follows:

1.—ROUTINE OF WORK.

On May 14th, I left Cobalt with my party for Kukatush, on the Canadian National Railway at the Ground Hog River Crossing. After caching part of my supplies at McLeod's store, I moved the party to Kasaswaychin Lake and commenced the survey of a chain of lakes which give a short route to Sahkatawichtah and Rice Lakes.

We finished survey of Kasaswaychin Lake on May 28th and moved camp to Katagi, the next lake, on May 29th. The survey of Katagi and Atekepemeska was finished June 10th and Arbeesee Lake commenced on the same day. Arbeesee Lake was completed on June 12th and camp moved to Sahkatawichtah Lake on June 13th. On June 16th, we had completed a portion of Sahkatawichtah which I was compelled by bad weather to leave unfinished in 1919, and camp was moved to the first portage en route to Rice Lake. On the morning of June 17th, when I called on the party to carry on up to Rice Lake, two of the men, Wilfred McLeod and J. J. McDonald, refused to go on, saying the wages were too small and the work too hard. Charles Sheppard, Howard Johnston and Robert McLeod remained. Leaving Sheppard and Johnston to guard the supplies, I left with Robert McLeod for Kukatush. I employed E. B. Bourke as assistant and James White as cook, both of North Bay, and arrived back with them at Sahkatawichtah Lake on the night of June 23rd.

On June 24th I moved the party to Rice Lake and completed the survey

of it on July 6th. From here we moved to Opeepeesway Lake, finishing this survey on July 15th.

On July 16th, we moved camp about half-way to Kukatush and arrived there on July 17th.

On July 19th, we commenced the survey of Ground Hog River. Having more trouble with men, I sent Bourke to North Bay for others. Bourke was unable to get men, but I finally got two in Sudbury. We finished survey of the Ground Hog River on August 17th.

The party was then moved by train to Trout River, which was finished on September 4th. Camp was then moved to the north boundary of Kapuskasing township and the survey of Kapuskasing River commenced. This was the final survey of the year, and was completed and the last men paid off on September 30th.

The following is the mileage of the traverse:

	Miles
Kasaswaychin, Katagi, Atekepemeska and Arbeesee Lakes.....	60.0
Rice Lake.....	44.0
Opeepeesway Lake.....	39.0
Sahkatawichtah Lake .....	4.0
Ground Hog River.....	87.0
Trout and Kapuskasing Rivers.....	97.0
Total.....	331.0

2.—METHOD OF SURVEY.

(a) Instruments Used.—The traverse was made throughout by transit and stadia. Azimuth angles were used and also the angle to the right was measured between stations. The stadia rods used, read direct to tenths of links. The targets were about two feet long by about six inches wide, one being firmly placed at the top of the rod, and the other moved to the correct position by the rodman. A supply of white linen was carried and the targets newly covered from time to time.

The accuracy of readings was checked from time to time by readings on chained lines and also on the sides of triangles calculated from chained base measurements. They were found to be very accurate.

(b) Field Notes.—One form of field notes was kept throughout the course of work. The notes were transcribed in ink and carefully checked. They show: station, azimuth, distance, angle right, bearing and, under Remarks, the point on which the reading was taken.

(c) Observations were taken frequently on Polaris for azimuth. The results are shown in the field notes.

(d) Posts and Blazed Trees.—Along the banks of the rivers and around the shores of the lakes, trees were blazed at intervals of about one mile and were marked: 1 M., 2 M., 3 M., etc. Records of these are shown on the plans and in the field notes.

On islands stump posts were made. A good sound tree was felled and the stump squared and marked with a letter, "A," "B," "C," etc., except in some cases when the island was very small, when a tree was blazed. The bearings shown to posts and trees are measured with the transit and are astronomic.

(e) Survey Lines, Township Boundaries.—In all cases where survey lines were found, they were tied in and are shown on the plans. Posts were planted

one chain from the shore on each side of the river or lake, where this had not been done in the original survey.

### 3.—DESCRIPTIONS OF LAKES AND RIVERS.

#### (a) *Kasaswaychin, Katagi, Atekepemeska and Arbeesee Lakes:*

*Shores.*—The shores of all these lakes are very similar, being mostly high and rocky. Back from the water's edge, the rock is covered with a sandy clay and boulder overburden. From different rock exposures I saw, I should say the formation was nearly all granite.

*Timber.*—Except for a brule near the C.N. Railway and one or two small brules, the timber is of good quality; jack pine, red pine, spruce and birch, averaging about twelve inches in diameter, with some cedar. Logs are at present being driven down a creek from Katagi to Kasaswaychin Lake, and may be driven from as far west as the west end of Atekepemeska Lake. From Arbeesee Lake the water flows south-westerly towards Sahkatawichtah Lake. The creeks could be driven in high water, if well cleaned out.

These lakes, together with a lake about two miles long in McOwen Township, form a very good canoe route to Sahkatawichtah Lake. The only portage not shown on the plan is one of four chains over a small falls at the foot of the lake in McOwen.

#### (b) *Rice Lake.*

*Shores.*—Except at the north end of Rice Lake, the shores are high and rocky. The formation is nearly all granite.

*Timber.*—Nearly all the west side and south end of the lake has been burned over and is covered with small birch and poplar. The north end is a spruce and cedar swamp. On the east side of the lake, north of the Narrows, the timber is good, being red pine from twelve to twenty inches in diameter, jack pine, birch and poplar, up to twelve inches.

*Islands.*—There are about forty islands in the portion of the lake west of Frater township, the largest, containing  $37 \frac{3}{5}$  acres, six others from 10 to 20 acres, the remainder very small. With the exception of a few of the smaller islands, all are well timbered with red pine from twelve to twenty inches, and jack pine up to twelve inches, with some spruce and cedar.

#### (c) *Opeepeesway Lake.*

*Shores.*—The shores of this lake are very similar to Rice Lake, being nearly all high and rocky.

*Timber.*—The timber on the shores of nearly the whole of the lake has been burned and small birch and poplar have grown up. There is, however, at the south-east of the lake, some white pine of from nine to sixteen inches in diameter.

*Islands.*—There are about twenty-one islands in the lake, all being small, the largest containing not more than five and three-fifths acres. They are nearly all well-timbered, mostly with red pine.

(d) *Ground Hog River.*—The survey of the Ground Hog River was commenced at Ground Hog Lake and continued through the townships of Keith, Penhorwood, Reeves, Melrose, Parke, Strachen, Montcalm, Poulett, Hicks, Stringer and into McVicar.

Ground Hog River has a width of from three and one-half chains, just north of the C.N. Railway, increasing to a width of from eight to nine chains in Stringer Township. The banks are, generally speaking, fairly high and well wooded, except where the timber has been burned. Brules and the kind of timber are shown on the plans.

The river was very low in August, when the survey was made, which made the work much easier. In high water, the flow would be very rapid. There are numerous rapids and a few falls. The most important rapids are the Five and One-Half Mile rapids, in the townships of Strachan and Montcalm, and the Ten Mile rapid, from Station 17 in the township of Hicks, through Stringer, to Station 13, township of McVicar. The total fall of the first is eighty-five feet, and that of the latter about the same, the Ten Mile rapids being much flatter. Canoes can be poled or tracked nearly all the way up both rapids, there being three lift-overs in each.

The Pishkanogami River flows into the Groundhog from the west, between Stations 23 and 24, in the township of Montcalm. At its mouth it is only about one and one-half chains wide. The banks are very steep and densely timbered. Cedar grows very thickly and overhanging the stream.

The Natt River empties into the Groundhog at Station 17 in Poulett township. It runs parallel and can be used for a canoe route when the Groundhog is high, to overcome the Five and One-Half Mile Rapids. Its width is from one to one and one-half chains.

*Waterpowers on Groundhog River.*—There are two powers which can be developed without extremely long penstocks for dams. The first is at Station 11 in Reeves Township and has a fall of eighteen feet. The flow measurement was made on August 22nd, 1920, but is away below average for the year, and is not a fair estimate. At this time it was 832.4 cubic feet per second.

The second power is somewhat better, having a fall of twenty-seven feet. It is located between Stations 6 and 8 in Melrose township. I did not measure the flow here, but would say 900 cubic feet per second, or practically 10 per cent. greater than the first falls would be about right for conditions at that time.

In both cases, the present head can be raised from five to ten feet without serious damage to lands upstream.

(c) *Kapuskasing River.*—The survey of the Kapuskasing River was commenced at the north boundary of Kapuskasing township and continued through the townships of Amundsen, Davin, Buchan, Clouston, Allenby, Maude, Concobar and Shaney.

Kapuskasing River has a width of about three and one-half chains at the north boundary of Kapuskasing township, and carries this width through to slightly north of the north boundary of Allenby. Through Concobar and Shaney the width increases to almost seven chains on the north boundary of Shaney.

The banks, with the exception of where rapids are shown, and at one or two points, are low, with a width of from ten to twenty chains where the ground rises to the average height of the country, say probably, one hundred and fifty feet above the river.

*Timber.*—The river is practically free from brules and the timber is nearly the same through the whole length surveyed, being cedar up to ten inches, poplar up to twelve, spruce from four to twelve, with some small balsam. There is the odd jack pine, but none of any great importance.

*Waterpowers.*—The most important power on the portion of the Kapuskasing surveyed is just north of the line between Buchan and Davin townships, between Stations 3 and 6. The falls itself measures 16 feet, but the total fall, including the rapids, is 33 feet.

The next is a falls of 10 feet in the township of Shaney, at Station 17. There are no others of importance.



(f) *Trout River*.—The banks of Trout River are very flat and covered with grass in most places for about ten chains. The country is very low and level.

*Timber*.—The timber consists of jack pine from four to eight inches, poplar, birch, small spruce and dead tamarac.

There are no waterpowers of importance.

Accompanying this report are:

*Plans*—

	<i>Sheets</i>
Kasaswaychin, Katagi, Atekepemeska, Arbeesee Lakes.....	1
Rice Lake.....	1
Opeepeesway Lake.....	1
Sahkatawichtah Lake.....	1
Groundhog River.....	8
Trout River.....	2
Kapuskasing River.....	5

*Field Notes*.—Two field books containing notes of all surveys.

The above is respectfully submitted.

I have the honour to be, Sir,

Your obedient servant,

(Sgd.) T. G. CODE,

Ontario Land Surveyor.

*The Honourable, the Minister of Lands and Forests,  
Toronto, Ontario.*

#### *Appendix No. 34.*

FORT WILLIAM, ONT., February 2nd, 1921.

SIR,—We have the honour to report that in accordance with instructions of 6th May, 1920, in regard to traverse of certain rivers and lakes in the District of Algoma, we started out on May 27th, having secured the necessary supplies via C.N. Railway, and by special arrangement were dropped right at Nagagami Crossing, about 5 o'clock in the afternoon, giving us ample time to get our camp up and supplies under cover for the night. I was also enabled to get an observation on Polaris.

The next morning we started the traverse of the Obakamiga River. It took us one week to traverse this stretch of river until it flows into the Nagagami Lake. The land in the near vicinity is barren of timber with the exception of spruce and cedar (mainly) which grow densely along the river banks, in places hanging over the river and intertwining themselves in trees on the other side. This necessitated clearing out before any progress was made. In addition, the river overflowed its banks in many places, and here hubs had to be driven and a lot of clearing out and cutting before sights could be obtained.

Lake Nagagami was rather easy going except when we struck the islands, and here the mainland was so cut up that it made progress slow. There were

also some days when we were unable to go out on account of heavy seas, the lake being shallow and squally.

On the 14th of June, Mr. Kirkup had to return to town to procure two more canoeemen, as our Indians had left on short notice. He rejoined the party on the 17th June with two men, and continued down the river.

The country tributary to the Nagagami River is in a general way low, level, clay country, covered with about two feet of moss and a small dense growth of spruce. Along the bank of the river the timber grows a little heavier but is scattered. As we neared the south boundary of McMillan township, we struck better country. Banksian pine and poplar ridges with sandy loam, and within the township of McMillan we found it to be rather heavily timbered with spruce. We tied into the Hudson Bay Company's Post on the Nagagami Lake, but it was deserted, and from appearances has not been used for several years.

The party arrived at the Transcontinental Railway on the 6th July and spent three days there repairing our outfit and getting everything ready for the next stretch of river. Mr. Kirkup had to go to Hearst to secure supplies and also one canoe as the other freight canoe had been ruined on the first part of the trip. He was also fortunate in securing the services of two good French-Canadians for freighting, who stayed with him throughout the job.

On the 9th July, the party started out again and packed supplies, etc., from the track to the north limit of McMillan township. From here they started to traverse once more and continued down the Nagagami and Kenogami Rivers to the south boundary of the Indian Reserve on the last mentioned river, tying in to the Hudson Bay Company's post at Mamawimattawa.

There is some good spruce timber in the township of McMillan, but north of there, through the townships of Fintry and Auden, it is scattered and scrubby, the soil being clay loam, very rocky. Just north of the last-mentioned township we struck a big brute about twenty years old, which, it is said, extends from the C.P.R. to the Hudson Bay. At any rate, it follows the river as far north as we travelled. It is clay country and, speaking to the Hudson Bay Company's factor, he said it was very productive and will grow almost anything. Mr. Kirkup also personally saw two or three good fields of potatoes at the Hudson Bay Company's post.

Fur-bearing animals are very scarce north of the Transcontinental Railway, and the Indians had very poor luck last year. Fish are also rather scarce.

On the 31st July, the party started back up the Kenogami River and made fair progress with the traverse, as the river is wide practically all the way. It is swift, shallow and rapid. There are no falls or heavy rapids and with six inches to a foot more water it could be called fairly navigable. There are high clay banks nearly all the way, covered with red shale. The country on either side has all been burnt and is now covered with second-growth poplar and a dense growth of willows. The moss has been burnt off and dried up, leaving a light clay loam covered in places with one or two feet of black muck and moss. This would make really good farm land. It is swampy in places.

The Pagwachuan River we found very dry, making our moves difficult. The river appeared to be in shelves or terraces, in some places seven or twelve feet deep, and suddenly so dry that we would have to drag our canoes. We ran rather short of supplies before we reached the Transcontinental on the 26th August. Here more supplies were secured and the party proceeded upstream and travelled to the boundary between the Districts of Algoma and Thunder

Bay, returning to the Transcontinental Railway grade on the 6th of September and entraining the next day for Fort William.

#### TIMBER.

In a general way there is no timber of economic value with the exception of the east side of Lower Nagagami Lake, the township of McMillan and in the near vicinity, and the northern part of the township of Bicknell. Outside of this there is nothing but old brule covered with second-growth poplar, and in some cases banksian pine and open swamps, with small spruce.

#### GAME.

South of the Transcontinental Railway, speckled trout and pike abound in both the Nagagami and Pagwachuan Rivers. As regards the fur-bearing animals, they are also plentiful. We saw many moose and bear and signs of beaver and muskrat. North of the Transcontinental Railway we saw several moose, but no fur-bearing animals, nor any sign of their having been there. In conclusion we would say that we can only cover the territory in a general way in our report. However, the notes of timber and soil have been put on the plan in detail. We found in the course of preparation of the plan that owing to the small scale we could not show all our intermediate readings as so many bearings and lines made too much confusion. It will also be found that on some islands there are no trees marked or posts planted. These were omitted because there was no growth on these islands with the exception of long grass, and they are no doubt swept in the spring by the heavy flow of water.

#### WATER POWER.

Several waterfalls of various natures were met with in the course of the traverse. These were all of a small nature, with two exceptions, one at Gull Rock Portage, on the Nagagami River, and one in the township of Clavet; the former, according to information obtained, could develop 5,904 horsepower, and the later, 413. The heads of these falls were noted in the traverse and are shown in the field notes, together with a cross section of the river at these points.

#### SOIL.

The soil in general is red and white clay, with clay loam in places and sandy loam on the ridges. It is generally speaking, good soil for agricultural purposes. It is rather rocky on the west side of Lake Nagagami and through the townships of Fintry and Auden, and north to the Three Portages on the Nagagami. North of this there are little or no rocky outcroppings.

During the months of June and July we experienced very heavy cold rains, but lost very little time as it generally happened that we moved on those days. The months of August and September were exceedingly dry as regards rainfall. There were no serious accidents or losses throughout the whole trip, although it was rather hard on the canoes, the four of which we used being practically done for, as they had to be dragged over the river bed so many times on account of the low water. This we did to expedite the work, as carrying the canoes would have slowed up the work very much, especially as there were no portages at these points. The waters of these streams seem to rise very rapidly, with a slight rainfall, but they drop even quicker.

Mr. Kirkup met Dr. Williams of the Geological Staff on the Kenogami River. He had taken exactly one week to come down to the mouth of the Pagwachuan River from Pagwa with two canoes. This trip is usually made in one day and a half. This will give some idea of what had to be contended with, especially going upstream.

The plots of traverse of the Nagagami, Kenogami and Pagwachuan Rivers are now completed and are being forwarded to you, with observations, accounts and vouchers in triplicate.

We trust all will be found in order.

We have the honour to be, Sir,

Your obedient servants,

BINGHAM & KIRKUP,

Ontario Land Surveyors

*The Honourable, the Minister of Lands and Forests,  
Toronto, Ont.*

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*Appendix No. 35.*

SAULT STE. MARIE, Ont., February 12th, 1921.

SIR,—Under instructions from you dated May 4th, 1920, to continue Missinaibi Lake and River surveys in the Districts of Algoma and Sudbury, I commenced organizing for this work on May 18th, 1920. I left Sault Ste. Marie with complete survey equipment and four men, for Missinaibi Station on main line of Canadian Pacific Railway. From Missinaibi Station I travelled by canoe on Dog, Crooked and Missinaibi lakes, and reached the point of commencement on this year's operations at Missinaibi Lake on May 26th.

For description of Missinaibi Lake please see my report of last year, as there was only a small portion of the work on this lake to complete.

The system of survey was carried out similarly to last year's work. Clearly marked bench marks were established at all the possible places for water power development. Levels based on Canadian Pacific Railway elevations at Dog Lake were carried through and checked out on the Canadian National Railway bench mark on Missinaibi River bridge near Peterbell Station to within one foot. This was checked again at the railway bridge crossing the Greenhill River three miles west of Argolis Station, and levels carried up Greenhill River to Greenhill Lake, where a bench mark was established.

MISSINAIBI RIVER, TOWNSHIP OF LERWICK.

The outlet of Missinaibi Lake is in the Indian Reserve about twenty chains west of the west boundary of the township of Lerwick, about five and one-half miles south of the north-west angle of the township. At the outlet the banks and bottom are of clay soil with no indication of rock. The last available site for a dam is, in my opinion, at the head of the rapids, forty chains east of



the west boundary of Lerwick, where solid rock outcrops on both sides and with elevation about 1,039 at the river crossing. I did not study topography with particular attention to construction of dams, but I consider that a dam of possibly fifteen hundred feet in length could be constructed to raise the level of the lake about fifteen feet. Apparently there are no better locations down the river.

#### TOWNSHIP OF CODERRE.

From this point the river runs south-easterly, north-easterly and northerly and crosses the north boundary of the township of Lerwick at 47.65 chains west of Mile  $4\frac{1}{2}$ , the total fall to this point is forty feet, comprised in about five different rapids. The banks of the river are of clay soil, with occasional outcrops of rock. The timber is principally poplar, jack pine, spruce and balsam, indications of the river being that a fair yield of pulpwood could be taken off. At high water this wood could be floated to the Canadian National Railway, and there is opportunity for ponding this about a mile below the railway crossing.

The river runs almost due north through the township of Coderre, then turns west along the northerly boundary and runs southwest to westerly boundary. The Canadian National Railway crosses the river by a deck plate girder bridge half a mile east of Peterbell Station. The river is of easy slope from the south boundary to within a mile and a half of the north boundary. From this point to a crossing of the westerly boundary there is a total fall of twenty-eight feet distributed through this distance in many small rapids. The timber is of little value as seen from the river. The soil is of clay land along the shores.

#### TOWNSHIP OF HAYWARD.

The river enters the township of Hayward about a mile and a half north from the south-easterly angle of the township, then flows generally parallel to the easterly boundary, crossing it and recrossing it at 21.25 chains and 50 chains north of the south-west corner of township of Champlain; thence westerly about a mile and a half to where the Greenhill River enters, and thence in a general northerly direction to the north boundary of the township, crossing boundary at 52.80 chains west of north-east angle of township. Above junction with the Greenhill River, there is a rapids about three-quarters of a mile long with a drop of thirty-three feet, which can be passed by a portage about fifty chains long. Up stream from this to the township of Coderre, there is a very slight fall in the river. Below the junction of the Greenhill River to the head of Split Rock Falls, there is a drop of twenty feet distributed in several rapids. At Split Rock Falls there is a drop of 15.6 feet, the watershed area at this point being approximately 2,300 square miles. There is a good site for a dam at the head of the Falls, with rock outcropping on both sides. The fall could be increased to thirty-five feet by the construction of a dam and flooding back would combine with regulation with Lake Missinaibi and make a probable development of five thousand horse power. (See Appendix No. 1).

The soil is typical clay land with areas of sand and outcrops of rock, including gneiss.

This township is included in the limit assigned to the Hayward Lumber Company. They are chiefly getting out jack pine timber for ties. There are considerable pulp areas distributed through this township.

## TOWNSHIP OF CHAMPLAIN.

From the north boundary of the township of Hayward, the Missinaibi River runs north-easterly through unsurveyed lands and enters the township of Champlain at the west boundary about two and one-half miles south of the north-west corner of the township, and then flows north-easterly to the northerly boundary, crossing this three miles east of the north-west angle. This is easy navigation the entire distance, except at Mary Falls, about one mile south of the north boundary, where there is a drop of twenty-four feet in a very short distance. There is a good outcrop of bed rock on both sides of the river, and it is my opinion that a dam could be erected here to flood back the water almost to Greenhill River junction, but this would have to be determined by contour survey. Water at head of Mary Falls is four feet below water at foot of Split Rock Falls. (See Appendix No. 2).

The timber and soil are similar to the township of Coderre.

## TOWNSHIP OF ERICSON.

The Missinaibi River enters this township at the southerly boundary three miles east of the south-west corner of the township and flows in a general north-easterly direction through the township. Very easy current the entire distance, velocity being about twenty chains per hour. About two miles from the southerly boundary of the township the Fire River enters. This river has not been surveyed and is larger than the Greenhill River. A portion of Brunswick Lake is included in this township and can be reached by a fifty chain portage from Missinaibi River.

The timber consists principally of spruce, poplar, balsam, birch and cedar. The north centre portion of the township is principally brule. The soil is of clay with outcroppings of rock, particularly in north-west portion of the township.

## TOWNSHIP OF CROMLECH.

The Missinaibi River enters this township at the south boundary near the 2 mile post and runs in a northerly direction, with very little fall to the north boundary of the township. Half a mile south of south boundary a portage runs eastward connecting to Opazatika Lake through a string of small lakes. The main portion of Brunswick Lake is included in this township within the westerly three miles.

The portion adjoining the river is excellent clay land, timbered with second growth poplar and birch, with fringe of spruce, balsam, poplar and cedar.

## TOWNSHIP OF ABBOTT.

The river runs through this township in a general course north, north-west, with very little fall; it is joined by the Brunswick River, which flows almost due north, at a point about two miles south of the north boundary of the township, there being a drop of about twenty-five feet between Brunswick Lake and Missinaibi River. Please refer to separate report on this matter.

The land in this township in the vicinity of the rivers is good clay soil, with occasional outcroppings of rock, timbered with spruce, balsam, poplar, birch and cedar.

## TOWNSHIP OF RYKETT.

The river enters this township about a mile and a half east of south-westerly angle of the township and flows north-east for about three miles, then north for about four and one-half miles, and north-east for about a mile and a half, then north to the northerly boundary at about one and one-quarter miles east of north-west angle. From this point, the river skirts the northerly boundary to within thirty chains of the north-west corner. About a mile and a half downstream from the southerly boundary, there is a rapids with a seven-foot fall; and about three and one-half miles from the southerly boundary, there is a fall (Pond Falls) with a head of seventeen feet. The rock outcrop at head of



Wissanabie River, Township of Rykert.

falls indicates that a dam of about six hundred feet could be built to flood back possibly ten miles and create a head of twenty-five to thirty feet, which might be further increased by excavating a portion of rock outcrop at Devil Cap Falls, about thirty chains downstream. The watershed tributary at this point is approximately two thousand eight hundred square miles in area; if a head of thirty feet were obtained, and Brunswick and Missinaibi Lakes regulated, a development of five thousand horse-power would be possible. The distance from present railway communication is considerable, and it does not appear that this site will be developed in the near future. Through the balance of the township, the fall amounts to about twenty feet, principally in the next two or three miles.

The soil is of clay, timbered with poplar, spruce, balsam and cedar.



## TOWNSHIP OF MAGLADERY.

The river runs through the south-west corner of the township, being at no point very far from the corner. The current is easy, and soil and timber conditions the same as in the township of Rykert.

## GREENHILL RIVER OR CONKING RIVER.

Pursuant to your instructions, I made a survey of this river from the Missinaibi River to Greenhill Lake, a distance of about thirty-five miles. In the first two miles of the river, from Missinaibi to the Canadian Railway crossing, the river falls thirty feet in a succession of rapids, a portage over a mile long being necessary. For about fifteen miles upstream from the Canadian National Railway crossing, the river has a very slight current, and is easily navigable for loaded launches, there being a depth of from ten to twenty feet at low water



Poplar Forest, in Township of Stanton, Missanabie River.

stage. Above this the river is easily navigable for canoe at ordinary stage. About seventeen miles upstream, Reva Falls has a drop of 32.7 feet, and three miles above this, Biron Falls and rapids has a drop of 30.8 feet. Above this, there is an aggregate fall from Greenhill Lake of about thirty-two feet, distributed through about a dozen small rapids. Greenhill Lake is merely an enlargement of the river, only about two hundred feet at its widest point. The watershed area above the two falls is very small, so that power development is out of the question.

The soil consists of clay, with outcroppings of rock at the falls and rapids.

The timber consists of spruce and a moderate quantity of poplar, balsam, and birch—a good deal of it below merchantable size—and scattered areas of jack-pine, large enough for timber. The spruce timber alone would warrant pulpwood operations.



## BRUNSWICK LAKE AND RIVER AND FOSTER LAKE.

The survey was made in connection with Missinaibi River survey in 1920, pursuant to your instructions.

Traverse survey was carried up Brunswick River to outlet at end of lake, and the larger part of the lake was traversed by triangulation, with detail filled in by stadia readings.

The lake is of moderate depth and could be easily navigated with small launches; the shores, in general, slope gently upward, but in some places, particularly towards the south end, they are high, rocky and steep. I consider the surface elevation could be easily increased fifteen feet, which would include Foster Lake and spruce swamp at its southerly end, with the exception of the swamps. Flooded area for such increase would probably not exceed one thousand acres. Foster Lake is shallow throughout, with mud bottom; and its elevation is practically the same as Brunswick Lake.

Apparently, there is a favorable site for an impounding dam about two and one-half miles below north end of lake on Brunswick River, where there are small rapids with rock outcrops on both shores. The river is easily navigable for canoes only for the entire length downstream; but upstream it is necessary to resort to trekking.

The soil adjacent to the lake and river is of clay, with frequent outcroppings of rock, interspersed with swamps, as is evidenced by the number of small creeks tributary to the river.

The timber consists principally of poplar, spruce, and balsam, in quantities sufficient to make a fair pulp proposition.

I have the honour to be, Sir,

Your obedient servant,

(Sgd.) C. R. KENNY,

Ontario Land Surveyor.

*The Honourable, the Minister of Lands and Forests,  
Toronto, Ontario.*

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*Appendix No. 36.*

SURVEY OF PART OF MONTREAL RIVER AND EAST BOUNDARY OF TIMAGAMI  
FOREST RESERVE, DISTRICT OF TIMISKAMING.

NEW LISKEARD, ONT., February 12th, 1921.

SIR,—Under instructions from the Director of Surveys, dated August 24th, 1920, we proceeded to Elk Lake on August 30th, 1921, and thence up the Montreal River to the location of the work. Owing to the extremely low water in the river and the rate at which it was falling, it was considered necessary to at once push forward to the head of Long Rapids, and start the traverse there. Even at this time, there was barely enough water in places to float

the heavily loaded canoes. At this point an observation was taken and the traverse carried forward, permanent stations being left so that the work could be picked up coming back.

Considerable time was spent trying to locate the line between the townships of Kimberley and Cairo, where it first crosses the river. At this point, the country has been burned over several times, the last time being in the early part of the summer of 1920. For a mile or more, either side of the river, what little timber there is standing, is so badly charred that it was impossible to find any blazes. Close to the river, one tree was found having three blazes on it that looked to be an old line. For purposes of closing off the traverse, this was accepted as being the line, and was afterwards found to be nearly correct when the traverse was figured to the second crossing. On account of not being able to accurately locate the line without considerable time and work, no posts were planted and no blazing done.

On the first section of the river in Cairo Township, all mining claims were located and tied to the traverse, excepting H.F. 11, 14 and 13. The fire at this point has swept the country bare, and completely destroyed the posts belonging to these three claims.

At the second and third crossings of the line between Kimberley and Cairo, the traverse was tied in and the line cleaned out, re-blazed and posted. In figuring latitudes and departures of the traverse between the second and third crossings of the line, the departures did not balance within approximately seven and one-half chains. The first mile of the township line was then chained and found to be in error nearly the same amount.

On the second section of the river in Cairo Township, all mining claims were located and tied in, excepting E.B. 2 and E.B. 9. Here, too, fire had destroyed all signs of lines and posts.

From here to the north end of the work, no difficulty was experienced in locating lines and posts of mining claims or townships. These were cleaned out and reblazed and posted where necessary. There was some trouble in finding the portages between the lakes north of Trout Lake, but these were well opened out and blazed when the traverse was run between the lakes.

In figuring the latitudes and departures for the townships of Robertson and Michie, the departures taken separately did not balance within approximately fifteen chains. On figuring the traverse between the south boundary of Robertson and the north boundary of Michie, it balanced very closely, thus showing the error to be on the line between Robertson and Michie.

The traverse was finished on the north end of the work on September 28th, 1920, and the party were down to the head of Long Rapids in Kimberley Township and at work in the afternoon of September 30th, 1920. In this section, all township, concession and lot lines were located and re-blazed and posted where necessary. All the original posts were found, excepting that on the line between lots 4 and 5 in the first concession of the township of Willison. This line was chained to the post on the first concession line for the necessary tie.

#### INSTRUMENT WORK.

A Gurley Light Mountain transit with adjustable stadia hairs, was used on this work. Frequent tests of the stadia were made during the progress of the work, but at no time was it found necessary to change the adjustment of the hairs. The high degree of accuracy attained may be judged from the

attached latitude and departure sheets, when balanced against the chained distances on the township lines. The rod used was a sliding stadia rod with a total length of thirteen feet, equipped with a fixed foot target and a sliding vernier target. The rodman, in the front canoe, read the rod and noted the reading. In a few cases, where it was impossible, owing to heavily wooded shore line, to get stations within stadia shot, triangulations of the distances were made by laying off a right angle base of fifty or one hundred feet and reading the angle subtended by this base, and solving for the distance equal to the base by cotangent of the angle. Observations on Polaris were taken as often as possible, and the calculations of these are attached to this report. In some cases, owing to the extremely low water, it was possible to get instrument stations on sand and gravel bars in the centre of the river, and materially added to the speed of the work.

#### TIMBER.

Notes on the timber met with during the progress of the work, will be found on the accompanying plan. Much of the country, from the beginning of the work to the west boundary of the Township of Cairo, has been burned over, some of it for the second and third time. There are two fine areas of timber along this route: one of white and red pine, along the shores of Upper Matachewan Lake, and another of jack pine, around the small lakes in the centre of the Township of Robertson.

#### WATER POWERS.

Most of the falls and rapids met with on this work, are on the Montreal River in the townships of Kimberley and Cairo, and are shown on the accompanying plan. No good site for a dam exists at the Long Rapids, that would make it feasible to utilize the total drop in this section of the river. In the township of Baden, the traverse was tied to the Power Reserve of Big Bend Falls, which is a short distance upstream on the west branch of the Montreal River from Upper Matachewan Lake. As the falls did not come within the limits of the traverse, no further data was taken.

#### BUILDINGS AND IMPROVEMENTS.

The buildings along the river are of the usual log construction, and are, in most cases, in good repair. There is one frame building at the Matachewan post of the Hudson Bay Company. There are no dams along this route, the only improvement in the river itself being the dock of the Matachewan Gold Mines, a short distance above Fox Rapids, in the township of Cairo.

#### ISLANDS.

All islands were given a designating letter, which was marked on a tree or post set in a prominent position. A sufficient number of readings were taken to give an accurate outline of the island, and if a closed traverse was, at any time required, it could be figured from the position of the different readings. No attempt was made to run a closed survey of each island, as in many cases it would have necessitated probably half a day's chopping for the entire party, on account of the amount of timber and brush overhanging the shore line.

The groups of islands along the south-west side of the township of Willison were numbered and lettered as shown on the plan of the original survey of this township.

Most of the islands, from the beginning of the work to Lower Matachewan Lake, have been formed from deposits of silt, etc., at the foot of rapids and at the junction with other streams, and are, in many cases, low and swampy and heavily covered with brush, with some large timber growing on a few of the higher parts. Many of them probably change their shape from year to year, owing to the action of the current during high water.

#### PLAN.

Accompanying this report is a plan, on tracing linen on a scale of twenty chains to the inch, showing all traverse run, together with the information collected on the work. In some cases, such as survey of island, ties to buildings and portages, where a large amount of detail was taken, it was found necessary to insert a plan of the area, on a scale of four chains to the inch, in order that all the information might be clearly shown. In each township, the numbering was kept separate, and for purposes of calculation was considered a separate traverse. On the plan every fifth station was numbered, to assist in locating any particular point. On the traverse sheets attached, the latitude and departure in inches for a scale of twenty chains to the inch, is given for each station, to facilitate the plotting of the traverse.

We have the honour to be, Sir,

Your obedient servants,

(Sgd.) SUTCLIFFE & NEELANDS,

Ontario Land Surveyors.

*The Honourable, the Minister of Lands and Forests,  
Toronto, Ontario.*

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#### *Appendix No. 37.*

THESSALON, ONT., March 23rd, 1921.

SIR,—In accordance with your instructions, dated May 20th, 1920, I have made a survey of certain base and meridian lines near Lake St. Joseph, in the districts of Kenora and Patricia, and have also made a traverse survey of the portion of Lake St. Joseph which lies west of the meridian line run by myself in 1919, and beg to submit the following report.

The route to Lake St. Joseph is a fairly easy one. Leaving Hudson Station on the Canadian Government Railway, one can go by gasoline boat, via Lost Lake, English River, and Lac Seul, as far as Perch Ripple, the first portage on Root River, which flows into the north-east end of Lac Seul. This portage is about seventy miles from Hudson. The canoe route up Root River is good. There are ten portages, the longest one being over the height of land into Lake



St. Joseph. This portage is about half a mile long, and is much the longest of the ten. The portages are all in good condition, as this route is extensively used by the Hudson's Bay Company for transporting supplies to their posts at Osnaburgh and Cat Lake. The starting point of the survey was about twenty-five miles by the route travelled down Lake St. Joseph from the end of the lake.

The first base line was started at Mile 60 on the meridian line run by myself in 1919, being the boundary between the districts of Kenora and Thunder Bay. This base line was run west, astronomically, for a distance of 18 miles. The second base line was started at Mile 66 on the same meridian line, and was also run west a distance of approximately 18 miles. From the 6, 12, and 18 Mile on the first base line, meridian lines were run north, astronomically, a distance of approximately 6 miles, to intersect the second base line. These meridians are known as the first, second and third lines, respectively.

Each base line was run as a series of six-mile chords of a parallel of lati-



On Root River, Patricia.

tude. The meridian lines were run north-east. These lines were all well cut out and blazed. A substantial wooden post, of the best green timber available, was planted at the end of each mile, except when this point fell in a lake or stream, and was surrounded by a mound of stones wherever possible. Bearing trees were marked with the letters, "B T," after being blazed in a prominent manner, at every post where possible, and the bearings and distances of these trees from the various posts recorded in the field notes. The number of the mile was marked with a scribing iron on the side of the post facing the point from which the line started. Where the end of a mile came in a lake or stream, the post was planted on the nearest shore, and the chainage from the nearest mile was marked on the post with a scribing iron.

At the end of every third mile, wherever possible, a standard iron post, of the type recently adopted by your department, was planted. At these iron posts, pits were dug and the earth from these was formed into two square pyramidal mounds, in the manner described in the general instructions relating

thereto. In some cases, it was impossible, on account of the end of the mile coming in water or on unsuitable ground, to plant standard iron posts and dig pits and erect mounds. In each of such cases, a standard iron post, surrounded by a witness trench and accompanied by a conical mound, was planted at the nearest even chain where suitable ground could be found, from the correct position of the point to be established. These witness posts, trenches and mounds were planted to indicate the following points:

On first base line, 9 mile and 18 mile.



Preparing mounds and pits.

On first meridian line, III mile.

On second meridian line, III mile.

Frequent observations were taken to determine the bearings of the lines run. The greatest variation from the theoretical bearing, found in the survey of the lines, was 2 minutes. The bearing of the first meridian line is north 0 degrees 2 minutes east, astronomically. This was discovered after the line was run nearly all the way through, and it was continued to the end on this bearing.

The traverse of Lake St. Joseph was started at a point on the south side of the narrows of the lake, 59.00 chains north of the 61 mile post on the meridian run by myself in 1919. The whole of Lake St. Joseph, lying west of this meridian, was traversed during the season. Included in this are 470 islands, ranging in size from small bare rocks to several hundred acres in area.

In the traverse, all angles were measured with a transit, and the distances were obtained by stadia and micrometer. The traverse was checked carefully by astronomical observations taken as often as possible, and also by ties to the base and meridian lines run during the season, which intersected the shores of the lake a number of times. Every night the traverse work of the day was plotted on cross-section paper, on a scale of twenty chains to an inch, and by this means any error in the traverse was at once located and corrected. The closing errors in the traverse were remarkably small during the whole survey.

At intervals of about a mile on the shore, prominent trees were blazed on four sides, and marked on the side next the water with the letter "P," followed by the number of the tree, thus, "P. No. ...." Similarly, the islands were marked by having the letter "I," followed by the number of the island. Each of the trees thus marked was tied to the nearest transit station, the bearing and distance from the station to the tree being recorded in the field notes.

The details of the traverse, showing all measurements, all posts, trees, and other monuments, and all information necessary for the proper interpretation of the survey, have been plotted on a scale of ten chains to an inch, and tracings of these have already been sent to your department. A plan on a scale of one mile to an inch has also been prepared on drawing paper mounted on cotton. This plan shows the base and meridian lines, and their relation to the surrounding country. The shore line of Lake St. Joseph and of all islands within the limits of the survey, have been reduced by a pantograph and plotted on this plan. This plan accompanies this report.

The country around this part of Lake St. Joseph is rolling and rocky. South of the lake, the country is hilly, with ridges of rock and deposits of sand and gravel arising in places, to form rounded hills. The valleys are occupied by deposits of muskeg, and in places by stones and boulders. The easterly part of the country north of Lake St. Joseph, is more level, the first eight miles of the second base line being mostly in swampy country and crossing only a few low ridges. West of this, the country becomes more broken, conditions being very similar to those south of the lake.

There are no areas of any consequence fit for agriculture. Areas of sandy loam, suitable for garden purposes, exist here and there, but the total area of these, in comparison with that of the country as a whole, is insignificant.

The whole country has suffered extensively from fire. Practically the whole of the south side of the lake has been burnt over at different times, and the timber is second-growth of various ages, depending upon the date of the fire. Much of the country has been burnt over more than once. There are a few isolated areas of fairly good spruce in some of the valleys, which have escaped the fires, but these are rather small in comparison with the total area.

North of Lake St. Joseph there is a fairly extensive area which has not been burnt over, and on which there is a good growth of spruce. The second base line enters this area about half a mile west of the starting point, on the meridian of 1919, and continues in it for six miles, to where the line first crosses the northerly bay of Lake St. Joseph, which runs up to the easterly outlet of



Cat River. This is a fairly level swampy area, with low rock ridges, and contains the largest quantity of timber seen during the survey.

The remainder of the second base line and the three meridian lines run almost entirely through burnt country, with second growth of varying ages.

There is a small grove of red pine on the north shore of the bay lying north-east of Island No. 49, near the east end of the part of Lake St. Joseph included in this survey. There would be probably fifty thousand feet of red pine in this grove, and it is the only red pine seen during the survey. There is no white pine whatever, the last white pine tree seen during the season being on an island in Lac Seul.

The second growth timber consists almost entirely of poplar, birch, jack pine and spruce. Along the shores of Lake St. Joseph there is considerable scrubby cedar, but it does not appear to extend inland, as very few cedar trees were observed along the lines.

Many of the islands have also suffered extensively from fire, although



H. B. Co. Post, Osnaburgh, District of Patricia.

some of them are fairly well timbered with spruce, jack-pine, white birch, and poplar of fair size. Information as to this is given in the detailed description of each island which accompanies this report.

The greater part of the portion of Lake St. Joseph surveyed during the season, lies between the first and second base line. The south shore of Lake St. Joseph, from the meridian of 1919 to the first meridian of 1920, is fairly straight and rocky, with occasional sand beaches. The ground rises quite rapidly from the lake, in places reaching an elevation of from 100 to 150 feet above the lake a comparatively short distance back. The north shore in this section, on the contrary, is low and flat, with many broad, deep bays, ending in fairly extensive marshes. Very little rock is exposed in this section, the shores being composed mostly of sand and boulders, excepting in the marshes, and these appear to be shallow, resting on a sandy sub-soil.

West of the first meridian the south shore becomes very much indented. There are many large islands with narrow channels between, these channels



extending back into the mainland in the form of narrow bays, and generally ending in marshes. The north shore is also considerably indented, but the islands are not so large. West of the second meridian, the main portion of the lake narrows down to a channel about four miles long, nearly straight, and from twenty to thirty chains wide. West of this the lake again spreads out into a number of irregular bays, one extending to the south-west for about five miles beyond the first base line, as far as Root Portage, which forms the height of land between the watersheds of the Albany and English Rivers. Another long bay extends for several miles to the north-east, dividing into two branches. The westerly outlet of Cat River enters the northerly one of these branches, at the extremity of which there is a short rapids with a fall of about three feet. The survey was discontinued at this point. Another outlet of Cat River enters a bay which runs north of the second base line a short distance west of the first meridian. Between these two outlets of Cat River lies Blackstone Lake, which is really an expansion of Cat River. This lake is a considerable body of water, with an exceedingly indented shore line crossed in places by the second base line and the second meridian. The second base line crosses a large island which lies between Lake St. Joseph and Blackstone Lakes, the two outlets of Cat River, of which Blackstone Lake is an expansion, forming the remaining boundaries of this island. No number was given to this island, it being treated as part of the mainland as far as the survey of Lake St. Joseph is concerned.

The geological formations in the area surveyed are of great interest. The rocks exposed along the first base line are mostly all granites, excepting near the extreme west end of the line, where it strikes the lake. Along the south shore of Lake St. Joseph the rocks are schists, of Keewatin age, the contact between the schists and the granites lying between the first base line and the lake. The granites occur again on the north side of the lake, and on the islands adjacent to the north shore, while the Keewatin series, referred to above, runs along the southern portion of the main body of the lake, outcropping on many of the islands. The schists occur on both sides of the long channel west of the second meridian line, which is referred to above, the contact running along the southern part of the large island which lies between Lake St. Joseph and Blackstone Lake.

Associated with the Keewatin rocks which lie along the southern shore of Lake St. Joseph, there is an iron range, the strike of which follows the general direction of the lake, and which can be traced for many miles. Low grade iron ore outcrops in many places, mostly on the islands along the south shore of the lake, and for a distance of about three miles both east and west of the first meridian. The exposures are numerous and some of them are fairly large. The largest exposures occur in a laminated form, carrying about 35 per cent. of metallic iron, consisting of a mixture of magnetite and hematite. The best sample which could be considered as representing an exposure of any magnitude, contained 44 per cent. iron. No attempt was made to explore this range beyond what was actually necessary for the carrying on of the survey, and such samples as were secured were picked up as the survey progressed. It is by no means improbable that systematic exploration will uncover deposits of merchantable ore.

Traces of this iron range in the form of narrow bands of magnetite, occur at the west end of Lake St. Joseph, south-east of the first mile on the third mer-

idian, and similar outcrops were seen along the strike of the range, at intervals between the outcrops mentioned above.

In the year 1911 I surveyed an Indian Reserve near the east end of Lake St. Joseph, about thirty miles east of the present survey, and observed traces of an iron range which appears to be an easterly extension of this same range. In travelling through the easterly portion of Lake St. Joseph, I have noticed, at several points along the south shore of the lake, very strong magnetic attraction which appears to be spread over a large area. This iron range, from my observation, appears to be about fifty miles long, and the indications are of such a nature, and cover so much ground that I would take the liberty of suggesting that a detailed geological survey be made of this area.

Throughout the greater part of the Keewatin area, the compass needle was extremely erratic. The amount of local attraction was recorded in the field notes wherever it varied from the normal; but in many cases the vertical



Packing Survey Posts.

component of the attraction was so strong that the needle would drag on the frame of the compass or on the glass cover, and no reading could be obtained. These readings are shown on the detail plans of the traverse, of which tracings have already been sent to your department. The points at which exposures of iron ore were observed are also shown on these tracings.

There are no water powers within the limits of the survey; but as stated in my report of last year, there are some falls on the Albany River, east of Lake St. Joseph, where power could be developed.

Lake St. Joseph is well supplied with fish of the varieties common to this north country. Pike and pickerel are very plentiful, and are easily taken with a troll, while whitefish and some lake trout are also taken in nets by the local Indians. Moose are very plentiful, and red deer appear to be coming into this section in increasing numbers. Partridge or grouse, of both the ruffed and Canada varieties, are fairly plentiful, and the number appears to be increasing in the last year or two. Some prairie chicken were also seen; but the

rabbits have almost disappeared. The local Indians report fairly good catches of the ordinary furs during the winter months.

Accompanying this report is a mounted plan on a scale of one mile to an inch, as previously mentioned; also my accounts in triplicate, which I trust that you will find correct. The field notes of the survey and the tracings, showing the details of the traverse, were forwarded to your Department some time ago.

I have the honour to be, Sir,

Your obedient servant,

JAMES S. DOBIE,

Ontario Land Surveyor.

*The Honourable, the Minister of Lands and Forests,  
Toronto, Ontario.*

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*Appendix No. 38.*

PARRY SOUND, October 4th, 1921.

SIR,—I have the honour to report that, in compliance with instructions, dated the 16th of May, 1921, I proceeded to make a traverse survey of certain lakes and rivers in the townships of Harrison and Wallbridge in the District of Parry Sound.

Along with my party, I left Parry Sound on the afternoon of May 30th, by way of the Canadian Pacific Railway, arriving at Naiscoot Station the same evening, where we pitched camp. The following day, after making the usual tests of our instruments, I commenced the traverse of the Nescodaong River. This river, averaging about one and one-half chains in width, has its headwaters in the lake bearing the same name. For the greater part of its way, the Nescodaong River, on its travels to the Georgian Bay, flows through a flat, extending six to ten chains wide. The country then rises into a granite rock. Level stretches, extending a few chains back, are also found along the Big River, sometimes called Giroux Creek. But for a part of the way this river from its headwaters flows through a large marsh of varying widths, where at times the river bed is practically lost. The greater portion of the small rivers are navigable to light craft, but apparently this depends to a great extent upon the character of the year. Owing to the excessive rainfall last spring, and the nature of the ground at that time, the rush of water could only find an outlet in the river basins; consequently many of the old dams were swept away, thus lowering the level of these rivers considerably.

For the most part, the lakes and rivers are lying between high and rocky shores, ranging from ten to twenty-five feet high, some of them even higher, as in the case of the Still River near the Canadian National Railway crossing, where its bank rises into bluff rock, sixty to seventy feet high.

The South Maganetawan River is a fine water route, even by motor boat, for about eight miles west from the Canadian National Railway. The route



from the South Maganetawan to the north branch of the same name, must be made by the portage, as the rapids are too wild in high water, and after the freshets have abated, it leaves the river bed practically dry in many places. Coming into the North Maganetawan, we find a river in most cases several chains wide, with numerous small falls and rapids, at the foot of which the black bass lurk.

#### TIMBER.

As these two townships have long been under timber license, very little of the original forests remain. The axe of the mighty woodsman has laid these giants low, leaving in their wake the fuel for the fire to complete the destruction. So, today, outside of certain small areas of maple, birch and hemlock that this fiery monster was not able to devour, very little remains but the charred skeletons of the past. As if to hide this blackened pall, small birch, poplar, balsam, banksian, and white and red pine sprang up. While this pine is still small, a few more decades of protection would make it a valuable asset. Between Nescodaong Lake and Gordon's Lake some very good white and red pine, ranging between six and twenty inches in diameter, was met with. This extends some distance east of what is known locally as One Tree Lake. Areas of varying dimensions of maple, birch, and hemlock decorated the country around Horseshoe Lake, Pike Lake, and along the portage between North and South Maganetawan Rivers. As a rule, the shores of the larger lakes are nearly depleted of timber. This is, no doubt, due to the fact of its presence near these waters, the natural artery of transportation. The stretches along the river flats were clothed with large-sized elm and ash, intermingled with scattered spruce and cedar.

#### SOIL.

Agricultural land, for the most part, is wanting in this country. Along the Still River, extending from Byng Inlet for about three miles upstream, was the only farming settlement met with. The land along this river, in the township of Henvey, is a clay loam, and appears very productive. Small areas along Big River were free of rock, but the country here is too sandy. There are a few scattered beaver meadows producing hay, but these are limited. With the exception of the river flats and numerous small swamps, the townships of Wallbridge and Harrison are rough, hilly, rocky country, unsuitable for agricultural purposes.

#### MINERALS.

As the rock formation here is granite of the Huronic era, no minerals of any consequence have been found. Some very good dykes of feldspar lays along the Nescodaong River in the township of Harrison.

#### FISH AND GAME.

Although numerous tourists visit this section of the country, the many lakes and rivers still abound with black bass, pickerel and pike. Red deer grazed in the meadows and several bears were seen, and the wolf made his presence known by his nightly howls.



## WATER POWERS.

No water falls of any importance are to be found in these townships. There are two small falls just east of the Canadian Northern Railway, four to six feet high, also two west of the railway, ten to twelve feet high, on the North Maganetawan River in the township of Wallbridge. At the foot of the falls there is a rapid with a fall, in about a mile, of thirty-eight feet, where a few hundred horse-power could be developed. While there are not large natural water powers to be found, there are places on the Still River where the banks are high and the river valley so narrow that dams could be easily built, making great heads of water.

While farming is out of the question, many of the shores and islands could afford a resting place for tourists. Nescodaong Lake has several suitable tourist's lots, and two beautiful islands, clothed with pine. South Maganetawan, with a fine water route from the Canadian National Railway, has some lovely points with sandy beaches. For those who wished farther to be removed, there is Gordon's Lake and several lakes to the east of it, all connected by good portages.

The township of Harrison was surveyed in 1876 by Thomas Byrne, and the township of Wallbridge by David Beatty, O.L.S., some few years later. Since that time, these two townships have been lumbered over several times, and coupled with the fact that the fires came to devour the remains, the original survey in many cases is nearly obliterated. True it is that many old pine stubs are still standing; but these are mostly burned so badly that blazes cannot be recognized. Along the banks of the larger lakes and rivers, nearly everything was cut, as it was easily taken to the water route, thus leaving not a trace of the former survey. In many cases, and by far the majority, where any traces of the original survey could be found, the marks were on fallen timber that, in a few more years, must readily succumb to the elements, thus obliterating entirely the original survey, as only those lot corners, where an old post has been perpetuated, can any landmark be found.

In reference to our surveys, you will notice that, north-east of Nescodaong and around One Tree Lake, in the township of Harrison, we have added several lakes that were not shown on the original plan as previously laid down. Nescodaong Lake and the lakes to the east of it are considerably higher—no doubt due to the presence of the dam on the Nescodaong River—thus making a motor boat route from the Canadian Pacific Railway to the east boundary of Harrison. These differences are general throughout. In the township of Wallbridge, you will also notice changes. Our plan of traverse will fully explain them. I am enclosing with the report, observations, descriptions of islands met with and area of same, and the bearing of the courses from station to station.

All of which is respectfully submitted.

I have the honour to be, Sir,

Your obedient servant,

J. T. COLTHAM,

Ontario Land Surveyor.

*The Honourable, the Minister of Lands and Forests,  
Toronto, Ontario.*

*Appendix No. 39.*SURVEY OF THE EXTENSION OF THE TOWNSITE OF HEARST, TOWNSHIP OF  
KENDALL, DISTRICT OF ALGOMA.

COCHRANE, ONT., July 26th, 1921.

SIR,—I have the honour to report that I have completed the survey of Blocks "A" to "U," inclusive, and Lots 506 to 529 inclusive, between the subdivided portions of the townsite of Hearst, as outlined in your instructions to me under date May 27th, 1921, and I herewith enclose certified copy of field notes of said survey; also full expense accounts and other returns necessary for your department.

Under separate cover, I am forwarding by registered mail a plan on tracing linen, giving the measurements and bearings of the south and west limits of of Blocks "A" to "U," and the measurements along the front of each of the town lots 506 to 529 inclusive, said plan being on a scale of three chains to an inch, and duly signed and certified to by me, as required under the Survey Act.

Owing to the change in direction of the East and West streets, which occurs between 7th and 8th Streets, it has been necessary to re-survey lots 500 to 503 inclusive, and slightly alter the frontage of said lots in order to have the new survey conform with the previous subdivision, the axis of the change of direction running somewhat diagonally from the north-east angle of lot 503 to near the south-west angle of lot 500.

I have placed iron posts at the several corners of the Blocks, and also at the front angles of the lots 506 to 529 inclusive, as outlined on the plan which accompanied your instructions, with the following exceptions:

North-east corner Block "S."

South-east corner Block "J."

South-east corner Block "F."

Wooden posts, 2" x 2" were placed at the above three corners, as the number of iron posts expressed to me was not sufficient to post all the corners shown on plan.

All iron posts were marked with a cold chisel, as directed, by placing the letter "R" on the side of the post adjoining the road, and the block number letter on the side adjacent to the block.

The numbers 506 to 529, inclusive, were marked on the lot angle posts planted.

I accepted, as a basis for the above survey, the line between two iron posts in the north limit of George Street, one being at the south-east angle of lot 226 and a second at the south-east angle of lot 210.

Owing to the almost complete disappearance of all original posts of the ormer subdivision, no definite check could be made at the junction of the new survey with the old, as only a few isolated posts are visible on the ground within the settled area of the town, and those are by no means to be relied on as evidence.

The total expense of the survey, as certified by the accompanying accounts, amounts to \$875.30, out of which sum I have received advances amounting to \$555.00, leaving a balance to the credit of my account of \$320.30.

I trust the accompanying plan, field notes, and accounts will meet with your approval, and that you will find the survey has been performed with efficiency and economy.

I have the honour to be, Sir,

Your obedient servant,

(Sgd.) J. LANNING,

Ontario Land Surveyor.

*The Honourable, the Minister of Lands and Forests,  
Toronto, Ontario.*

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*Appendix No. 40.*

FORT WILLIAM, ONT., July 13th, 1921.

SIR,—We have the honour to report that, in accordance with your instructions of date 4th November, 1920, in regard to resurvey of the north three concessions of the township of Pardee, we started out with party on November 15th, and reached there late in the evening, making camp.

We made inquiries from many of the old settlers, who had been in both Pearson and Pardee a number of years, as to any evidence that they had found as to blazes and old lines, and in no case had old blazes or posts been seen.

We, therefore, retraced the south boundary of Pearson township, starting in accordance with your instructions, at the post planted by O.L.S. MacDougall, between lots 4 and 5, Pearson, assuming it to be the east limit of Pardee township, planting posts for Pardee, and renewing the Pearson posts wherever necessary.

We found no trace of the original line, and MacDougall's line was fairly obliterated, most of the way.

We ran south between sections 9 and 10, Pardee, and at the end of the first mile, finding that the topography did not work out with the old field notes, we ran east, crossing the Pine River. Here in the spruce swamp we found sufficient evidence to throw a shortage of 16 chains in the first concession.

This led us to be suspicious that the Pearson south boundary was not the north boundary of Pardee.

We afterwards looked north on this same line as finally located, and found the old original blazes extending for 12 chains into the township of Pearson. We found no posts or bearing tree.

We referred to the Director of Surveys the question of accepting the south boundary of Pearson for purpose of resurvey, or of endeavoring to locate the original north boundary of Pardee as run by Hugh Wilson in 1870, and under his instructions, accepted the south boundary of Pearson as marked by O.L.S. MacDougall, and planted all posts on this line.

On the east boundary of Pardee we found two old bearing trees, one at the line between concessions 1 and 2 and the other between concessions 2 and 3, also several old blazes which lined up fairly well.

This constituted all our evidence on the east boundary, which produced to intersect the south boundary of Pearson, making a jog of some ten chains west from the post, between lots 4 and 5, Pearson, which the Department believed to be on the line between townships of Crooks and Pardee.

On the south boundary between concessions 3 and 4, sufficient old blazes were found to establish the direction of the line; one old bearing tree between sections 11 and 12; an original cedar post and bearing trees in the swamp at the south-west corner, still in a well-preserved condition, were also found.

For the west boundary we ran in a northerly direction, following the blazes which occurred in the first fifty chains, and produced north to intersect the south boundary of Pearson, no further trace being found of the old lines.

It was very rocky, and had been burned over four or five times. This was found to leave a net distance of 320 chains across sections 10 to 13 inclusive.

#### TIMBER.

As is well known, this part of the country was stripped of its pine timber several years ago, and fires have ravaged it to a great extent, so that there is really no timber of economical value to be had. What is left of the spruce is being taken out by settlers for pulpwood.

#### SOIL.

The soil in general is clay and clay loam, though badly broken by high hills.

With the building of roads to the settlers, they are satisfied that they can make a success of their operations.

We lost only three days through rain and snow during the months of November and December, 1920, and returned to Fort William on December 23rd. Conditions then became sufficiently bad for resurvey work that, in accordance with your instructions, we decided to suspend operations until spring.

We returned to Pardee in May 3rd, 1921, and completed the running of the lines.

In plan and field notes, we have shown clearings made by settlers on the north half of concession 1, Pardee. As will be seen according to the lines as fixed by resurvey, part of Mr. Flood's clearing falls on the east half of section 11, located by Auld, and part of Auld's clearing falls on the west half of section 10, located by Gardner.

There is a clearing on the west half of section 7 made by Mr. Pitt, but we have been unable to ascertain whether Pitt has located on this lot on the east half of section 8.

We trust that you will be able to arrange some method of protecting these settlers in regard to the clearings in the issue of patents.

We returned from the field on June 4th, leaving two chainmen to re-post the north boundary, in accordance with the changed circumstances.

This they did, but unfortunately made an error in chainage, which Mr. Kirkup and one man had to go back to correct on January 22nd.



The plan of Pardee and the field notes are now completed, and are being forwarded to you, with observations, accounts, transports and stationery vouchers in triplicate.

We trust all will be found in order.

We have the honour to be, Sir,

Your obedient servants,

BINGHAM & KIRKUP.

Ontario Land Surveyors.

*The Honourable, the Minister of Lands and Forests,  
Toronto, Ontario.*

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*Appendix No. 41.*

QUETICO PROVINCIAL PARK, November 2nd, 1921.

HONOURABLE SIR,—I beg to submit my report for the fiscal year ending October 31st, 1921.

We have had an average staff of ten rangers during the year whose duty was to patrol, repair and build cabins, cut trails, roads, etc. The rangers work in twos and the cabins are built so that at the end of their respective sections every alternate cabin serves the rangers of two or more sections.

We have built two cabins this year, one on Windogoostan Lake, near the eastern boundary, and one on Baptism Lake, also on the eastern boundary. The road to Kawene from Eva Lake was very much improved by the blasting of rocks, for which purpose a box of 60 per cent. dynamite was used, but owing to the unseasonable weather, the drainage was not completed this year. A road for fall and spring use was cut around Eva Lake on the west side, a distance of about ten miles to connect with the road from Eva Lake on the one end and with the road from French to Eva Lake on the other. This road is over a very rough country, but will serve its purpose during the opening and closing season of the water and ice routes, and was particularly needed in case of serious sickness or accident.

I would respectfully draw your attention to the number of tourists who enter the Park from the American side compared with what enters from the Canadian side. Of the angling permits sold, over one-fourth entered from the American side, and of the guides, nine out of thirteen were engaged on the American side. This is owing partly to the access to the Park from the American side, but principally because the Canadian National Railway through trains were not scheduled to stop at Kawene, the chief point of entrance on this side. The result is that the moneys spent by these tourists is spent with American merchants instead of Canadians, as we would desire. I would respectfully recommend that every inducement and convenience be offered to intending tourists to enter the Park from the Canadian side, so that their provisions and outfits might be purchased in Canada, and also that Canadians might be access-

ible as guides to those who require them. I had a barge built on Eva Lake for the purpose of getting in supplies, but the boat with which we tow it is not at all satisfactory. It is equipped with a 5 horsepower twin-cylinder Waterman engine, two of which were purchased three years ago. The hull of both boats are in good condition, and I would recommend that heavier power be purchased for each boat.

Moose and deer are very plentiful, and also fur-bearing animals, particularly beaver, which are increasing very fast. Partridge are so numerous I have counted thirty-eight in the door-yard on one occasion.

I have the honour to be, Sir,

Your obedient servant,

HUGH McDONALD.

*The Honourable Beniah Bowman,  
Minister of Lands and Forests,  
Toronto, Ontario.*

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*Appendix No. 42.*

ALGONQUIN PROVINCIAL PARK OF ONTARIO.

HONOURABLE SIR,—I beg to hand you my annual report for the fiscal year ending October 31st, 1921.

Our staff for the past year has been composed of thirty-five rangers, house-keeper and superintendent. Three of the old staff were retired, having reached the age set by the Act, and three new men appointed to replace them.

During the hunting and trapping season these men have been constantly travelling their sections, and owing to the lack of employment generally, they have been kept constantly on the move, the temptation to do some illegal trapping being too great for men who, if otherwise employed, would not do so. No doubt some parties have succeeded in getting away with furs, which, considering the vast area and the many means of entrance into the Park, is not to be wondered at. However, I feel our men have done their best and have kept the Park comparatively clear of poachers. Several have been routed out and their traps and supplies taken, and some have been brought in to stand their trials. Fines have been imposed to the amount of \$110, and all traps, etc., taken.

Game of all kinds has very much increased, especially the deer, which are to be seen in numbers wherever you go in the Park. Partridge (ruffed grouse) too are more plentiful than they have been for many years, the past winter having been most favourable both to deer and grouse. Beaver, mink, marten, fisher and otter are also abundant everywhere. Even the sections, such as Joe Lake, where so many were taken out for years, have filled up again. No trapping has been done by the rangers this year in accordance with instructions, and no live animals of any kind shipped from the park. Wolves are numerous in some sections despite the fact that the rangers wage constant warfare upon them, and a great many deer are destroyed by these brutes. Our men have poison

out for them wherever advisable and several have been taken. They come in from north of the Ottawa River every fall, owing to the abundance of deer in the park, and the ease in obtaining food. It is seldom the rangers get a chance to shoot them, but a few are taken in that way. Poison, however, is the main, and in fact the only successful way of getting them.

As a health resort, the Park is becoming very popular, and this year we have had hundreds of visitors all through the season from all over Canada and the United States, also many from abroad. The hotels have been filled to overflowing all through the season. Fishing has been exceedingly good in all sections, some very fine specimens of salmon trout and speckled trout having been taken. The small-mouthed bass introduced into these waters by the Department have proven a great addition and afford splendid sport to the angler.

Apart from the revenue derived from fishing licenses, which this year amounted to \$1,919.00, there is a very large amount spent in the province by the parties who visit the park, principally for the fishing, and I would strongly recommend keeping the lakes along the Grand Trunk Railway well stocked each year so that there may be good angling for parties who cannot go far afield.

While the primary object in setting aside this vast territory was the preservation of our Ontario fur-bearing animals, and I think this should always be kept in mind in dealing with all subjects pertaining to the park, it has become so popular with, not only the people of the province but with the whole of America, that it is evident provision must be made to meet this growing desire of the people to get close to Nature and become acquainted with the wood folk of our Canadian woods. This is a healthy desire and I think well worth encouraging. I would therefore recommend opening up the lakes adjacent to the railway for leasing. Cache Lake is pretty well taken up, but there are the following lakes that could be opened up: Rainy, Brule, Potter, Joe, Source, Lake of Two Rivers and Whitefish. The Grand Trunk Railway touches all these lakes and the timber has all been cut adjacent to them. This would meet the need for many years to come.

We have a number of Boys' School Camps on different lakes, all of which were well patronized this season. The Girls' School Camp, too, under the management of Miss F. L. Case, of Rochester, located on Cache Lake, had some seventy-five inmates for the summer.

Several new leases were applied for on Cache, Rock, Canoe and Joe Lakes, and several cottages were erected.

Rents to the amount of \$1,124.00 were collected here. This does not include rents paid by the Grand Trunk and others direct to Toronto.

Regarding bush fires, we have been very fortunate. A number were started along the railway but in all cases they were gotten under control before any damage was done. In the north section they were not so fortunate, but most of the portion burnt over had been cut out and fire had been over it before. The fire tank here has been a great advantage, and I consider one should be stationed at Brent, on the Canadian National Railway, under competent men. This would very much minimize the danger from fires started along the right-of-way, and it is from such fires we have suffered in the past. We seldom have fires started by tourists and it is very gratifying to note the increased interest taken by the people along these lines. The telephone system too has been a great advantage in this and many other ways.

Our staff during the summer months, when there is no danger from trappers, act as fire rangers on their respective beats, cut out portages, repair and built shelter-houses and see that the park regulations are observed in every way.

Some startling reports reach the Department from time to time regarding laxity of the park staff and the large quantity of furs illegally taken out of the park. This has especially been the case with each change of government, but they will, as they have in the past, prove mostly untrue. I have no hesitation in saying that the rangers do their work to the best of their ability and are respected by all who have not a mean desire to make trouble. A great deal of time has been spent in the past in running down such reports, generally to find them either a matter of spite and wholly untrue, or cases of hearsay.

Considerable work was done on the Minnising Road, making it fit for a car to travel, which was highly appreciated by the visitors who had to travel it to Minnising Camp.

I, myself, reach the age set for retiring before the end of the coming year, and while I feel quite competent to continue the work as I have for the past twenty-three years, I am quite willing to retire or remain as the Government may direct. I have given the best of my life to this work, and I assure you, whether I am retired or not, I shall always take the deepest interest in Algonquin Park. The people of Canada are only beginning to realize what a boon it is to them not only as a game preserve and pleasure ground, but as the preserver of the water supply of a large portion of the province, no less than five rivers taking their head here.

The bass supplied from the Government hatcheries were this year planted in Cache, Pollies and Lindies Lakes, and I would strongly recommend a like number being sent next season, also some salmon and speckled trout for adjacent lakes.

I have the honour to be, Sir,

Your obedient servant,

(Sgd.) G. W. BARTLETT,

*Park Superintendent.*

*The Honourable, the Minister of Lands and Forests,  
Toronto, Ontario.*

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*Appendix No. 43.*

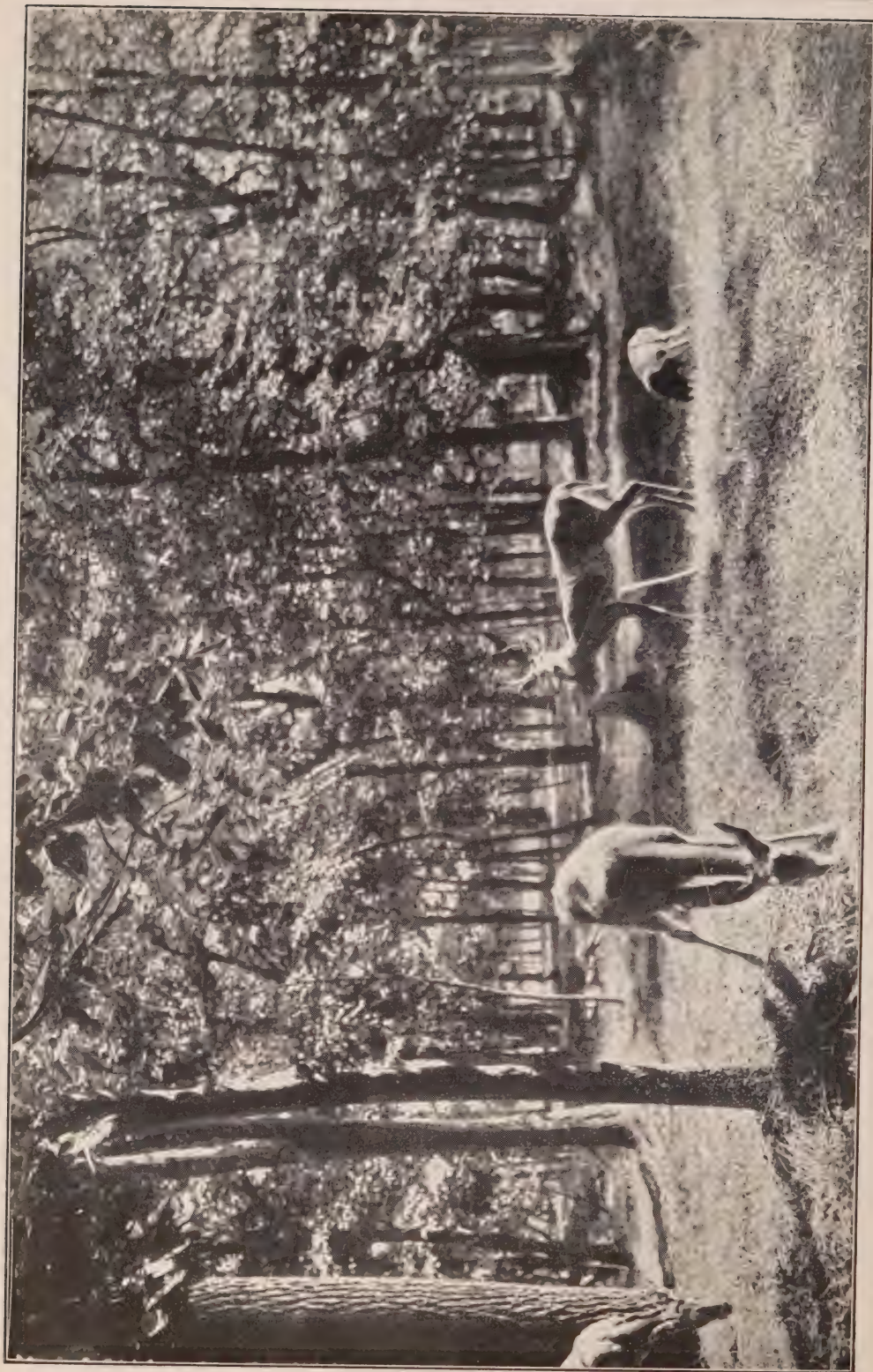
RONDEAU PROVINCIAL PARK.

MORPETH P.O., ONT., October 31st, 1921.

HONOURABLE SIR,—I beg to submit my report for the fiscal year ending October 31st, 1921.

Rondeau Provincial Park, as a summer resort, is becoming more popular each year, situated as it is at the extreme end of the town line between Harwich and Howard Townships, about four miles south of the Talbot Road Provincial





Red Deer—Rondeau Park

Highway. Many tourists avail themselves of the opportunity of visiting our beautiful park, and as it covers an area of about 5,000 acres and is thickly wooded with all kinds of timber, it affords a great deal of interest and pleasure to lovers of nature.

Both the Eau side and the Lake side are equally popular for the building of cottages, and the surveyed lots on both sides are nearly all taken. Lots have been in steady demand this last summer. Twenty-two new cottages have been erected and twenty-six or more are to be built next season. There are now between fifty and sixty cottages in the park.

Last summer a large number of people availed themselves of the tenting privileges of the park, and many white tents were pitched in the shade of the wide-spreading oaks, while some were up among the "Pines," about a mile up the lake shore.

A certain amount of lumbering was done last winter by taking out dead and deteriorated timber, which was sawn up into different grades of lumber, and will be used for building and repairing whatever may be necessary in the park. As we purchased a planer, this year we are able to put all our own material in shape for building, as otherwise we would have to draw it a distance of 12 miles to get it sized and dressed for use.

This providing of lumber ready to use made it possible for us to reconstruct and repair the old pavilion into a new and up-to-date one, and it is now in good condition for the use of the public in holding public gatherings or for convenient shelter when needed.

One thing that was needed very much was the supplying of hot and cold water to the public. A new building was therefore erected in which a hot water system was installed. This has proved a great boon to the large picnics which come here from great distances, as it has supplied all demands so far, being equal to the occasion in the case of one of the largest picnics ever held here—that of the Howard Councillors and U.F.O., which was held on the 26th of August—the crowd being estimated at around 30,000. A large number of new tables and benches were also made this year and placed in the picnic grounds for the convenience of the public.

As the park has been so well patronized this year, the public store and restaurant did a thriving business, the largest of any previous year.

Last winter several hundred loads of gravel were drawn down the beach, a distance of some four miles, to be used as needed for cement work and repairing of roads. The roads are sandy and they need quite a lot of attention, as holes are very easily worn in them by the constant traffic.

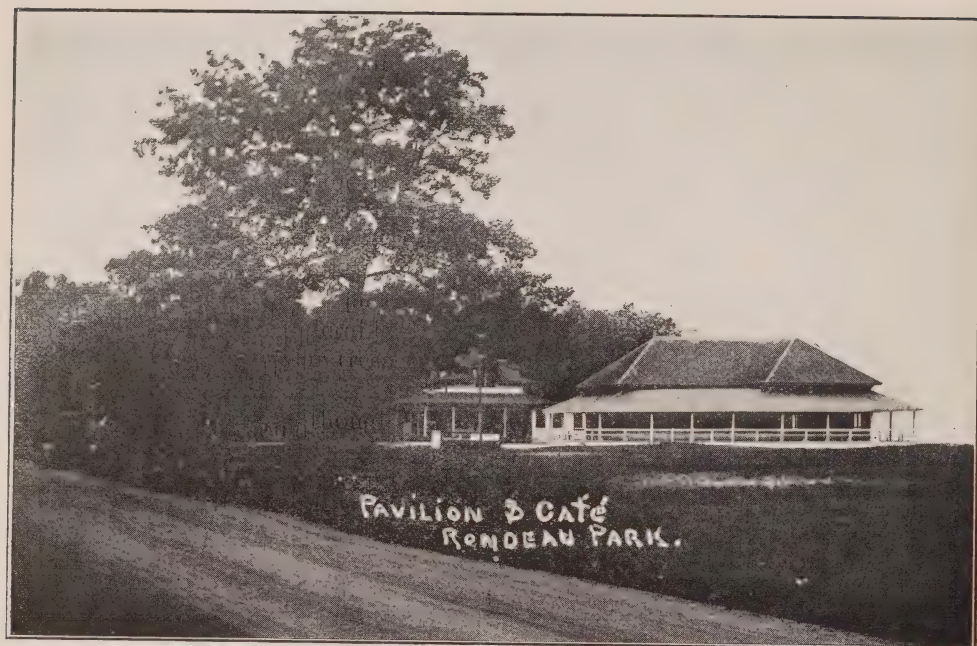
One feature which was an additional attraction to the park this year, was the introduction of a good, well-equipped launch, built by a private party, and used for excursions on Rondeau Bay, and also for running excursions to Eriau and Erie Beach, as well as to other summer resorts to the west of Rondeau Park. This is something that has been needed for some time, and it has proved very popular.

We have had a fairly successful year in rearing pheasants and we have supplied many eggs to people outside the park for propagation purposes.

The wild geese and wild turkeys do not increase in numbers very rapidly as there are too many enemies to permit of the young birds coming to maturity.

Deer are very plentiful and are of considerable interest to the visitors. The marshes contain great quantities of muskrat. Some trapping of these rats is done from year to year.





Pavilion and Café, Rondeau Park



Intersection, Rondeau Park.



Wild geese at home,—Rondeau Park.



Domesticated Wild Turkeys,—Rondeau Park.



The colony of beaver is thriving, although it is impossible to give an estimate of their number. Some new colonies are reported outside the park.

The wild duck season has been one of the best in years for lovers of that sport, the ducks coming here by the thousand.

As Rondeau Park is so interesting in every way, those who have visited it once wish to come again, and many communications are received every season asking for accommodation. We can only assist a limited number, however, by securing cottages from private parties who are willing to rent. But there are a great number who wish hotel conveniences and there is nothing provided for as yet in that line. We hope in the near future to see a modern summer hotel erected which will provide ample accommodation and thus make Rondeau Park a most popular and favorite resort.

Yours very truly,

(Sgd.) GEO. GOLDWORTHY,

*Superintendent Rondeau Provincial Park.*

*Honourable Beniah Bowman,  
Minister of Lands and Forests,  
Toronto, Ontario.*

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*Appendix No. 44,*

TORONTO, ONT., October 31st, 1921.

HONOURABLE BENIAH BOWMAN,  
*Minister of Lands and Forests, Ontario.*

SIR,—I have the honour to present the annual report of the work done by the Colonization Roads Branch during the fiscal year ending October 31st, 1921, which in schedule form gives the details of each portion of work undertaken and its cost.

Construction and repair of roads and bridges was carried out as has been the case since the year 1909, first, by the direct expenditure of money by this Branch, and second, by making grants to Municipalities passing Colonization Roads By-laws authorizing expenditures upon certain of their roads. Grants were also made to Municipalities passing by-laws for the purchase of road machinery and for the salaries of Township Road Overseers.

Our total expenditure for the year was \$506,180.80. Of this the sum of \$293,540.26 was expended directly by the Government on roads and bridges. \$176,154.04 was granted towards Colonization Roads By-laws, \$2,553.52 towards Machinery By-laws and \$552.40 towards the salaries of Township Road Overseers. A further sum of \$33,380.58 was expended on inspection of the work, engineering, surveying and locating roads and other miscellaneous items.

The work carried on by direct expenditure through our Branch, embraced 75.29 miles of new road construction and 540 miles of old road improved, making a total of 615.29 miles. 257.4 miles were surfaced and 62 bridges and 1,284 culverts were constructed. With the assistance of the grants towards the Colonization



Drain in swamp constructed entirely by means of blasting powder.



Pioneer road through rock cut, Muskoka District.

Roads By-laws, 42.01 miles of new road were constructed and 605.75 miles of old road repaired or improved, 334.9 miles of this were surfaced and 61 bridges and 1,260 culverts were built.

During the year several trunk and main roads were surveyed, and are now being mapped. This work is very important and should be continued so that we may have adequate records as to the location of the roads we have built



Wolf Lake, Shore Road, <sup>1</sup>Frontenac County.

and reliable data as to the roads upon which we are contemplating construction in the immediate future.

The labour situation during the latter part of the season approached the normal conditions which existed before the war, and there is every indication that so far as our work is concerned, normal conditions have arrived.

C. H. FULLERTON,  
*Superintendent Colonization Roads.*





## DEPARTMENT OF LANDS AND FORESTS, ONTARIO,

ANNUAL STATE

NUMBER	TOWNSHIPS	NEW CONSTRUCTION							DITCHED
		Cleared and Stumped		Graded and Shaped		SURFACED			
		Length, rods	Width, feet	Length, rods	Width, feet	Material	Length, rods	Width, feet	
1	2	3	4	5	6	7	8	9	10
1	Aberdeen Township roads . . . . .								40
2	Admaston Township roads . . . . .								
3	Addington road, Kaladar and Denbigh . . . . .								400
4	Albermarle Township roads . . . . .								
5	Algona North Township roads . . . . .								
6	Algona South Township roads . . . . .								
7	Allan Township roads . . . . .	280	36	280	30				
8	Alice and Fraser Township roads . . . . .	75	30	75	18	gravel	90	8	
9	Airy Township roads . . . . .								
10	Anson and Hindon Township roads . . . . .								2
11	Anstruther Township roads . . . . .								
12	Appleby Township roads . . . . .	120	16	91	14				
13	Armour Township roads . . . . .	160	40	160	18	gravel	60	6	
14	Armstrong Township roads . . . . .	260	50	245	30				
15	Assiginack Township roads . . . . .								30
16	Badgerow Township roads . . . . .								
17	Bagot and Blythfield Township roads . . . . .								
18	Baxter Township roads . . . . .								200
19	Baldwin Township roads . . . . .	20	30	150	18	earth	20	8	180
20	Balfour Township roads . . . . .	40	40	25	30	clay	40	6	20
21	Bangor, Wicklow and McClure Tp. rds. . . . .								820
22	Barber Township roads . . . . .	91	20	87	20				
23	Barrie Township roads . . . . .								200
24	Barrie Island Township roads . . . . .								
25	Bedford Township roads . . . . .								
26	Bedford Tp. Richardson Mine road . . . . .	320	66	140	22	stone	100	18	280
27	Beauchamp Township roads . . . . .	100	30	320	22	gravel	10	6	200
28	Bethune Township roads . . . . .								
29	Bexley Township roads . . . . .								
30	Bidwell Township roads . . . . .								15
31	Bigwood Township roads . . . . .								
32	Billings Townships road . . . . .	10	30	80	20	gravel	80	8	30
33	Bleazard Township roads . . . . .								100
34	Bonfield Township roads . . . . .	335	40	175	16				
35	Boulter Township roads . . . . .	315	40	435	18				
36	Bracebridge-Baysville road . . . . .	40	30	40	18	gravel	40	5	
37	Brethour Township roads . . . . .	30	40	570	40	clay	40	6	412
38	Bright Township roads . . . . .								15
39	Broder Township roads . . . . .	1,028	30	750	20	gravel	78	6	1,840
40	Bromley Township roads . . . . .								
41	Brougham Township roads . . . . .								
42	Brudenell and Lyndoch Tp. roads . . . . .	40	60	40	30				320
43	Brunel Township roads . . . . .			60	20	gravel	60	5	
44	Buchanan Township roads . . . . .								
45	Bucke Township roads . . . . .								
46	Burleigh Township roads . . . . .								
47	Burpee Township roads . . . . .								
48	Burwash Township roads . . . . .								15
49	Caldwell Township roads . . . . .								34
50	Calvin Township roads . . . . .								
51	Campbell Township roads . . . . .								
52	Camden Township roads . . . . .								

## COLONIZATION ROADS BRANCH.

MENT, 1920-1921.

BRIDGES		CULVERTS		CUT AND FILL		MAINTENANCE										EXPENDITURE	NUMBER
						Side-Brushed		Graded and Shaped		SURFACED			MILEAGE				
										Length, rods	Width, feet	Length, rods					
Span	Material	Number	Material	Material	Cubic yards	18	19	20	21	22	23	24	25	26	27		
12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27		
		2	wood	earth	969			400	20	gravel	800	6	3.00	\$ c.			
				rock	250			250	18	gravel	225	10	.80	\$ 1,477.34	1		
		18	cedar	rock	1,560			1,040	16	gravel	1,820	9	6.00	323.25	2		
				stone	20					gravel	220	5	.75	4,900.00	3		
										gravel	300	8	.94	502.56	4		
		4	cedar			400	20	1,570	18	gravel	450	10	5.00	200.00	5		
		1	wood	stone	4	20	12	410	24	gravel	630	5	2.88	1,509.93	6		
		2	tile					970	18	gravel	1,475	8	5.50	1,499.70	7		
		11	cedar					710	18	gravel	70	8	2.25	1,671.80	8		
		3	stone	stone	61			273	18	gravel	198	6	.85	1,120.99	9		
				stone	40	55	20	310	15	gravel	358	6	5.00	615.35	10		
15	cedar	9	wood					546	12				2.20	300.00	11		
				stone	60	10	20	320	18	gravel	320	6	1.50	801.51	12		
22	tamarac	13	cedar	clay	5,418	160	15	260	20	gravel	290	6	2.75	999.57	13		
		1	wood	earth	40	50	12	80	24	gravel	780	8	2.50	2,965.93	14		
16	tamarac	3	spruce			180	18	453	14	gravel	235	6	1.50	1,310.02	15		
		1	metal			100	20	425	20	gravel	1,225	8	4.50	725.52	16		
		4	cedar			200	30	175	18	earth	240	4	.75	1,010.95	17		
		7	wood	earth	275	80	8	60	24	gravel	90	7	1.00	500.00	18		
		2	cedar	clay	200			200	12				.75	711.87	19		
		11	cedar	earth	676	51	10	437	19	gravel	220	5	3.50	402.12	20		
		1	t'm'r'c			160	24	280	24				1.15	1,175.37	21		
		10	cedar	rock	20	53	10	68	14	gravel	427	8	1.50	758.45	22		
1	12	wood	5	wood	earth	20	20	190	24	gravel	569	7	1.80	513.40	23		
			1	tile	earth	460		165	14	gravel	298	8	1.00	1,300.79	24		
			3	stone	rock	7,000							1.00	851.69	25		
		11	cedar	clay	2,310			460	30	gravel	217	6	3.25	4,825.17	26		
		10	cedar			435	25	1,120	18	gravel	330	8	3.50	1,599.56	27		
Re	p. wood	1	stone	stone	260	25	22	555	20	gravel	418	6	2.60	1,051.05	28		
		3	stone	earth	120	180	24	330	24	gravel	353	7	1.50	1,024.19	29		
		2	wood	stone	30	21	14	260	14				.80	1,102.50	30		
		10	wood	earth	272	25	12	120	24	gravel	345	7	1.50	499.94	31		
				stone	274	650	4	311	40	clay	311	30	2.10	1,409.21	32		
		19	cedar	gravel	674			635	16	gravel	532	18	4.10	500.00	33		
		9	cedar										1.50	2,623.87	34		
				stone	260			90	20	gravel	96	5	.50	809.07	35		
1	52	wood	2	cedar	clay	2,256	80	360	20	gravel	256	6	3.25	1,501.15	36		
		6	wood	earth	265	200	20	30	12	gravel	740	6	2.50	2,858.00	37		
		39	wood	clay	30	240	5	1,743	12	gravel	725	7	11.50	1,407.72	38		
		2	stone			300	20	638	18	gravel	500	10	3.50	2,492.90	39		
								450	12	gravel	100	10	1.25	767.68	40		
		2	cedar			200	20	1,620	18				6.25	500.00	41		
		7	cedar	rock	7	80	20	250	20	gravel	150	7	1.20	1,689.20	42		
						250	15	300	15				1.00	950.01	43		
		8	cedar	clay	1,847			1,230	20	gravel	669	6	5.00	252.10	44		
		2	stone			410	20	320	20	stone	686	6	2.75	3,125.00	45		
		9	wood	stone	63	90	12	60	24	gravel	570	7	2.00	1,478.00	46		
2	16	cedar	5	pine				273	12	gravel	26	6	1.00	1,298.07	47		
		4	cedar					372	14	gravel	836	6	2.75	700.10	48		
		9	cedar			60	40	507	18	gravel	187	10	2.25	1,507.03	49		
		6	wood			260	12	800	24	gravel	1,686	7	6.00	1,017.25	50		
						165	15	165	14	gravel	225	8	.75	2,927.65	51		
														300.70	52		

DEPARTMENT OF LANDS AND FORESTS ONTARIO,  
ANNUAL STATE

NUMBER	TOWNSHIPS	NEW CONSTRUCTION							DITCHED
		Cleared and Stumped		Graded and Shaped		SURFACED			
		Length, rods	Width, feet	Length, rods	Width, feet	Material	Length, rods	Width, feet	
1	2	3	4	5	6	7	8	9	10
53	Cameron Township roads.....	367	40	207	18	gravel	20	6	.....
54	Cane Township roads.....	440	30	185	24				30
55	Capreol Township roads.....	40	35	360	20	stone	40	18	530
56	Carden Township roads.....								30
57	Cardiff Township roads.....	40	66	45	20	gravel	30	8	
58	Cardwell Township roads.....	30	10	80	18				
59	Carling Township roads.....	80	40	240	16	gravel	300	7	140
60	Carlow Township roads.....								
61	Carnarvon Township roads.....	80	24	80	24	gravel	60	8	61
62	Cartier Township roads.....	160	10	160	10	earth	640	10	200
63	Casey Township roads.....	760	30	560	26	gravel	160	10	120
64	Casimir Township roads.....	455	16	455	14				
65	Cavendish Township roads.....								
66	Chaffey Township roads.....	80	40	156	20				
67	Chandos Township roads.....								250
68	Chapleau Township roads.....	150	20	600	20	sand	220	6	35
69	Chapman Township roads.....	30	18	160	15	gravel	240	6	85
70	Chisholm Township roads.....	520	40	170	16				40
71	Christie Township roads.....								340
72	Clarendon and Miller Township roads.....	90	40	80	16				312
73	Cockburn Island Township roads.....								40
74	Cosby Township roads.....								
75	Creighton Township roads.....								
76	Crerar Township roads.....								
77	Croft Township roads.....								
78	Dalhousie Township roads.....								
79	Dalton Township roads.....								260
80	Darling Township roads.....								
81	Dawson Township roads.....	80	30	200	24	gravel	90	7	30
82	Denbigh Township roads.....								
83	Digby Township roads.....								
84	Dill Township roads.....	113	50	328	18	earth	20	15	209
85	Dowling Township roads.....								20
86	Draper Township roads.....								
	Draper and Macaulay T. L.....								
87	Dryden Township roads.....	80	33	160	33				115
88	Dungannon Township roads.....								
89	Dunnet Township roads.....								
90	Dymond Township roads.....								
91	Eastnor Township roads.....	126	66	126	28				
92	Elzevir Township roads.....								
93	Falconbridge Township roads.....	240	35	500	25				320
94	Falconer Township roads.....								10
95	Fairbank Township roads.....								160
96	Faraday Township roads.....								100
97	Fenwick Township roads.....	28	40	442	20	gravel	22	7	68
98	Ferguson Township roads.....								
99	Ferris Township roads.....	230	40	205	18				
100	Field Township roads.....								
101	Firstbrooke Township roads.....								
102	Foley Township roads.....								
103	Franklin Township roads.....	500	30	400	18				

## COLONIZATION ROADS BRANCH.

MENT, 1920-1921.

BRIDGES			CULVERTS		CUT AND FILL		MAINTENANCE						MILEAGE	EXPENDITURE	NUMBER	
Number	Span	Material	Number	Material	Material	Cubic yards	Side-brushed		Graded and Shaped		SURFACED					
							Length, rods	Width, feet	Length, rods	Width, feet	Material	Length, rods				Width, feet
11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
															\$ c.	
1	22	tamarac	8	cedar					130	18				1.75	1,017.21	53
			4	t'm'r'c	clay	440	240	30	345	24	gravel	130	6	3.00	2,892.41	54
			3	stone	stone	900			640	16				3.15	742.43	55
			3	tile	rock	71	220	18	2,228	18	gravel	393	6	8.00	1,204.25	56
			6	wood			85	30	225	18	gravel	55	5	4.00	600.23	57
			9	wood	earth	100	200	21	370	20	gravel	225	5	1.50	1,200.70	58
			5	cedar	sand	300								1.00	949.49	59
			5	cedar	earth	84			82	18				.27	300.53	60
			1	wood	stone	976	100	12	100	26	gravel	345	8	1.50	1,312.61	61
			1	wood										2.00	200.50	62
					clay	100			720	24	gravel	1,036	6	9.00	5,288.03	63
			2	cedar							gravel	122	6	1.80	578.20	64
1	Rp	'd cedar	2	cedar			1,240	15	350	12	gravel	93	7	4.00	290.25	65
			4	cedar										.50	500.01	66
			8	cedar	stone	100	326	12	306	14	gravel	271	7	2.50	1,014.05	67
					clay	215								2.00	1,000.00	68
2	14	cedar	21	wood	rock	205	660	12	640	16	gravel	480	7	3.50	1,940.39	69
			14	cedar	stone	38			565	18	gravel	550	10	4.50	2,971.66	70
1	10	cedar	13	cedar	earth	20	1,200	14	880	8	gravel	880	6	4.50	1,300.25	71
			3	wood	stone	625	56	20	236	16	gravel	180	5	2.00	901.02	72
							760	12			gravel	225	8	2.50	500.27	73
1	12	wood	11	wood			545	16	728	14	gravel	285	6	3.50	1,198.99	74
1	18	cedar	2	cedar	sand	225			200	12	clay	545	12	2.00	385.33	75
4	11	cedar	5	cedar					286	14	gravel	1,440	6	4.50	1,104.78	76
			3	cedar			60	18	160	14	gravel	160	6	.50	400.35	77
									500	18	gravel	200	10	1.57	302.50	78
			9	wood	rock	10	750	8	2,240	18	gravel	481	6	9.00	1,000.70	79
									100	25	gravel	370	8	1.40	302.81	80
			3	wood	stone	10								.62	549.97	81
					earth	280					gravel	25	7	.25	200.00	82
					earth	40	10	8	47	20	gravel	135	5	.50	301.15	83
														1.40	455.00	84
			2	wood					320	15				1.00	103.25	85
			6	stone	rock	10	200	30	125	18	gravel	625	5	2.00	1,301.20	86
			9	cedar	rock	400	480	20	500	18	gravel	325	5	2.00	2,499.07	87
2	16	cedar	3	cedar					20	12				.75	354.90	87
			5	cedar	stone	1,126	125	20	579	18	gravel	229	7	2.25	1,401.84	88
			4	cedar					403	12				1.26	203.41	89
			1	metal	clay	3,264	130	20	660	24	gravel	1,538	6	5.75	5,110.03	90
2	19	cedar												.40	498.09	91
			2	metal					368	20	gravel	108	5	1.10	208.80	92
			4	cedar										1.57	614.85	93
1	10	cedar	2	cedar					275	12				.80	400.00	94
			7	wood			320	26	720	20				2.75	306.25	95
1	Rp	'd wood	3	cedar	rock	20			320	18	gravel	355	6	2.00	995.13	96
1	20	cedar	2	cedar	sand	861	500	30	640	16	gravel	466	7	3.50	3,208.84	97
			6	cedar	rock	45	400	30	480	14	gravel	240	6	1.50	497.77	98
			30	cedar					1,210	18	gravel	355	10	5.00	2,773.39	99
			6	cedar					1,260	12	gravel	679	6	4.75	1,899.03	100
									480	24	gravel	393	6	1.50	1,497.76	101
1	12	pine	6	cedar			640	24	160	16	gravel	560	7	2.00	548.75	102
			9	wood										1.55	500.60	103



DEPARTMENT OF LANDS AND FORESTS ONTARIO,  
ANNUAL STATE

NUMBER	TOWNSHIPS	NEW CONSTRUCTION							DITCHED
		Cleared and Graded		Graded and Shaped					
		Length, rods	Width, feet	Length, rods	Width, feet				
1	2	3	4	5	6	7	8	9	10
104	Freeman Township roads.....								
105	Frontenac Trunk road.....								1,166
106	Galbraith Township roads.....								260
107	Galway Township roads.....								
108	Garson Township roads.....								20
109	Gladstone Township roads.....	560	50	390	20	gravel	70	6	
110	Glamorgan Township roads.....								
111	Gordon Township roads.....								30
112	Gould Township roads.....	30	66	70	22				
113	Grattan Township roads.....								
114	Griffith and Matawatchan Twp. roads.....								
115	Gurd Township roads.....								
116	Hagar and Loughrin Township roads.....	289	30	440	14	gravel	160	9	403
117	Hagarty and Richards Township roads.....	30	60	125	28				
118	Hallam Township roads.....	170	28	184	22				50
119	Hanmer Township roads.....	600	33	145	20	sand	300	20	40
120	Harvey Township roads.....	160	40	610	28				
121	Harris Township roads.....								424
122	Harvey Township roads.....								
123	Head, Clara and Maria Township roads.....								
124	Henwood Township roads.....								78
125	Hilliard Township roads.....	320	40						1,105
126	Hilton Township roads.....								320
127	Himsworth North Township roads.....	120	30	120	16	gravel	35	7	537
128	Himsworth South Township roads.....	80	40	80	16	earth	50	6	
129	Hinchinbrooke Township roads.....								
130	Hodgins and Gaudette Township roads.....	1,506	40	1,506	24	gravel	35	5	18
131	Horton Township roads.....								
132	Howe Island Township roads.....								
133	Hudson Township roads.....								
134	Hugel Township roads.....	728	16	300	12				400
135	Humphrey Township roads.....								30
136	Hungerford Township roads.....								
137	Huntingdon Township roads.....								
138	Johnson Township roads.....								20
139	Kennebec Township roads.....								40
140	Kearns Township roads.....								20
141	Kirkpatrick Township roads.....								
142	Kirkpatrick and McPherson Tp. roads.....								
143	Korah Township roads.....	5	30	5	20				129
144	Laird Township roads.....								
145	L'Amable to Maynooth Trunk road.....								
146	Laurier Township roads.....	62	24	132	20				4
147	Lavant Township roads.....	40	25	40	25				30
148	Laxton Township roads.....								100
149	Lefroy Township roads.....								153
150	Limerick Township roads.....								
151	Lindsay Township roads.....								50
152	Lorne Township roads.....	1,283	30	1,300	16				102
153	Loughboro Township roads.....								100
154	Louise Township roads.....	40	24	120	20	gravel	80	7	120
155	Lount Township roads.....								49

## COLONIZATION ROADS BRANCH—Continued.

MENT, 1921-1922.

BRIDGES			CULVERTS		CUT AND FILL		MAINTENANCE						MILEAGE	EXPENDITURE	NUMBER	
Number	Span	Material	Nnber	Material	Material	Cubic yards	Side-brushed		Graded and Shaped		SURFACED					
							Length, rods	Width, feet	Length, rods	Width, feet	Material	Length, rods				Width, feet
11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
															\$ c.	
1	12	cedar	10	metal					250	18	gravel	300	5	1.00	500.07	104
1	10	wood	17	metal	stone	1,457			928	18	gravel	783	9	3.00	4,900.00	105
			1	wood					145	20	gravel	390	6	2.25	962.99	106
			3	cedar					741	16	gravel	341	7	5.00	606.70	107
1	12	cedar	3	cedar	clay	130			75	12				.25	150.25	108
									80	20	gravel	260	6	2.75	1,102.49	109
			13	stone	stone	125			710	16	gravel	113	7	4.00	905.10	110
									130	28	gravel	728	7	3.00	1,505.76	111
					rock	150								.25	403.50	112
1	10	cedar	4	cedar	stone	50			1,120	18	gravel	300	9	3.50	1,006.85	113
			17	cedar					2,300	12	gravel	320	8	8.00	1,200.00	114
			10	cedar	rock	30			126	16	gravel	60	7	.50	300.00	115
			9	cedar	gravel	1,932			668	12	gravel	375	5	5.50	1,454.43	116
			7	cedar					1,180	20	gravel	900	8	5.50	2,217.13	117
1	12	wood	3	wood	earth	583			150	24	gravel	140	6	1.20	800.91	118
			4	cedar										2.00	199.75	119
			2	stone	gravel	2,481			180	24	gravel	587	6	4.00	3,593.60	120
			7	cedar	stone	209			30	28	gravel	1,012	6	4.00	4,609.53	121
			2	metal	stone	25			1,241	18	gravel	854	6	4.50	1,102.25	122
			2	cedar					205	18	gravel	20	10	.61	457.75	123
			4	cedar	clay	890			990	20	gravel	774	6	4.00	2,679.16	124
			6	cedar	clay	4,000			480	24	gravel	419	7	5.00	4,115.54	125
									200	20	gravel	70	5	1.00	349.79	126
			4	cedar					70	16	gravel	740	7	3.50	1,651.73	127
			6	cedar					100	18				1.25	655.98	128
			7	cedar					52	16	gravel	957	8	3.00	931.89	129
2	25	cedar	10	wood	earth	8,890								6.00	4,506.19	130
			1	cem'nt					100	30	gravel	75	12	.50	300.00	131
					stone	10			121	6	g.stone	130	8	.40	302.20	132
			4	cedar	clay	853			2,380	26	gravel	730	6	9.00	2,707.99	133
1	14	pine	19	cedar	earth	50			1,243	14	gravel	605	6	9.00	2,547.41	134
			10	stone	stone	240			375	18	gravel	341	7	1.25	934.60	135
					stone	104			301	16	gravel	367	6	1.15	851.93	136
			1	tile					170	20	gravel	211	14	.75	495.61	137
					stone	125			120	24	gravel	120	6	1.30	453.33	138
			4	metal	earth	200			170	18	gravel	766	8	3.00	904.76	139
1	12	tamarac	6	cedar	clay	3,141			1,950	24	gravel	1,541	6	9.00	5,778.14	140
2	10	wood	23	wood	stone	52			880	16	gravel	330	6	3.50	2,320.83	141
			7	wood					584	14	gravel	1,285	6	6.75	1,836.95	142
					earth	730								.10	510.90	143
			1	wood					190	22	gravel	420	6	1.31	800.40	144
			9	cedar	earth	2,988			1,649	18	gravel	794	7	6.25	3,014.29	145
			2	stone	earth	560								.50	597.02	146
			8	cedar	rock	10			1,350	20	gravel	650	8	4.50	1,409.99	147
			2	stone	stone	183			1,960	18	gravel	633	6	7.00	1,582.14	148
			3	tile	stone	84			120	28	gravel	475	6	1.50	949.23	149
									103	16	gravel	62	9	.32	299.15	150
									10	18	gravel	450	5	1.40	775.20	151
			29	wood	earth	356			60	24	gravel	80	8	4.27	1,300.77	152
			7	stone	stone	50			46	18	gravel	212	9	1.75	853.25	153
1	Rp	d wood	4	wood										.40	698.69	154
			6	cedar	earth	40			369	16	gravel	105	5	1.85	552.15	155

DEPARTMENT OF LANDS AND FORESTS ONTARIO,  
ANNUAL STATE

NUMBER	TOWNSHIP	NEW CONSTRUCTION							DITCHED
		Cleared and Graded		Graded and Shaped		SURFACED			
		Length, rods	Width feet	Length, rods	Width, feet	Material	Length, rods	Width, feet	
1	2	3	4	5	6	7	8	9	10
156	Lumsden Township roads.....	210	30	310	9				210
157	Lutterworth Township roads.....								
158	Lyell Township roads.....								
159	Macaulay Township roads.....								
160	Machar Township roads.....								
161	Madoc Township roads.....								
162	Mara Township roads.....								
163	Martland Township roads.....								
164	Martland and Scollard Township roads.....								15
165	Mason Township roads.....								
166	Mattawan Township roads.....								
167	May Township roads.....								
168	May and Harrow Township road.....								
169	Mayo Township roads.....								
170	McDougall Township roads.....								
171	McDonald Township roads.....								
172	McKellar Township roads.....								
173	McKenzie Township roads.....								
174	McKim Township roads.....								360
175	McLean Township roads.....								
176	McMurrick Township roads.....	280	45	127	15	gravel	100	6	100
177	McNabb Township roads.....								
178	McPherson Township roads.....	300	16	130	14				
179	Medonte Township roads.....			89	20				53
180	Medora Township roads.....								
181	Meredith Township roads.....								
182	Methuen Township roads.....								
183	Merritt Township roads.....	60	32	160	20				
184	Mills Township roads (Manitoulin).....								20
185	Mills Township Roads (Parry Sound).....	499	60	400	30				
186	Minden Township roads.....								
187	Monmouth Township roads.....								
188	Monteith Township roads.....	960	40	640	16				
189	Monteagle and Herschel Township roads.....	180	30	180	16				
190	Morgan Township roads.....			255	20				40
191	Morrison Township roads.....								
192	Murchison Township roads.....								
193	Muskoka Township roads.....								
194	Nairn Township roads.....					gravel	30	7	
195	Nipissing Township roads.....	280	24	280	14				
196	Oakley Township roads.....								
197	Olden Township roads.....								
198	Orillia Township roads.....								
198 a	Orillia and Matchedash T. L.....								
199	Oro Township roads.....								26
200	Pakenham Township roads.....								
201	Palmerston Township roads.....	70	40	30	16	gravel	10	8	
202	Papineau Township roads.....								
203	Parkinson Township roads.....								
204	Patterson Township roads.....								
205	Patton Township roads.....								40
206	Pembroke Township roads.....								

COLONIZATION ROADS BRANCH.

MENT, 1921-1922.

BRIDGES			CULVERTS		CUR AND FILL		MAINTENANCE							MILEAGE	EXPENDITURE	NUMBER
Number	Span	Material	Number	Material	Material	Cubic Yards	Side-brushed		Graded and Shaped		SURFACED					
							Length rods	Width, feet	Length, rods	Width, feet	Material	Length, rods	Width, feet			
11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
				1 cedar										1.00	102.00	156
				7 stone	stone	118	23	20	258	20	gravel	183	6	2.00	658.90	157
				3 cedar					270	18	gravel	50	12	.85	504.10	158
				1 stone	earth	270					gravel	4	5	.02	200.00	159
				8 cedar	stone	5	424	24	567	14	gravel	330	6	2.00	1,524.99	160
				2 steel					120	18	gravel	108	7	.37	248.90	161
					stone	1,409			51	22				.20	997.55	162
				4 wood					182	12	gravel	390	6	1.80	799.91	163
				5 wood					20	14	gravel	35	6	.12	611.71	164
				7 cedar			101	16	260	12				.82	703.85	165
				13 cedar					285	18	gravel	85	10	.90	800.40	166
					earth	444			120	20	gravel	250	6	.80	801.25	167
											gravel	270	6	.85	300.45	168
				9 cedar					178	20	gravel	138	6	.57	500.26	169
				7 cedar	stone	50	560	24	80	14	gravel	80	7	1.75	303.11	170
1	12	cedar			earth	75			80	24	gravel	205	5	.63	451.93	171
				7 cedar	rock	25			106	16	gravel	480	7	1.50	800.00	172
				3 cedar				160	400	16	gravel	320	6	1.25	499.75	173
				10 conc'te			150	11	360	22	clay	150	7	1.13	450.88	174
				5 cedar	rock	85			125	20	gravel	250	5	.80	850.00	175
				5 cedar	sand	600								.90	500.00	176
									400	18				1.25	307.25	177
3	12	cedar	25	cedar			150	16	3,088	12	gravel	240	6	12.00	4,008.68	178
				7 metal	earth	886			197	18	c.stone	258	6	1.40	1,504.15	179
				1 stone	stone	300			45	20	gravel	45	5	.12	402.50	180
				2 wood					100	24	gravel	140	6	.50	299.90	181
											c.stone	135	6	.41	300.00	182
1	18	wood	15	metal	earth	300	295	12	320	20	gravel	250	7	1.50	1,009.07	183
				3 metal	stone	800	40	14	30	24	gravel	415	9	1.35	1,401.59	184
				3 cedar	earth	60	84	30	160	16				1.75	749.30	185
				3 wood	stone	40	40	19	650	18	gravel	45	6	2.25	301.35	186
				6 stone	stone	38	45	30	380	18	gravel	57	6	1.25	503.83	187
2	22	cedar	12	cedar	earth	1,000								3.00	2,969.62	188
				5 cedar	stone	422			197	20	gravel	199	6	1.20	896.05	189
				2 cedar	stone	250					gravel	90	16	1.08	303.75	190
									500	20	gravel	500	5	1.57	500.15	191
				5 cedar					320	18				1.00	505.90	192
				11 cedar	rock	14	550	40	380	18	gravel	140	5	1.75	1,000.00	193
				5 wood	stone	220	200	12	140	16				.75	396.70	194
				6 cedar	stone	380	30	20	160	16	gravel	250	7	2.10	1,554.21	195
					stone	380								.10	500.00	196
				1 stone	stone	198	15	15	24	16	gravel	160	9	.50	300.65	197
				1 conc'te					290	18	c.stone	245	7	1.00	601.60	198
					stone	122			97	18	gravel	101	7	.50	504.25	198a
				1 wood	stone	434			125	18	gravel	329	7	1.25	904.62	199
											gravel	160	8	.50	100.00	200
				1 stone	stone	1,037					gravel	753	10	2.50	1,426.15	201
				11 cedar					1,117	18	gravel	130	6	4.00	1,545.04	202
1	16	wood	2	wood	earth	1,348			300	20	gravel	444	6	1.60	1,399.90	203
				3 stone	stone	600	30	20	20	18				.20	294.63	204
1	12	wood	6	wood	earth	360	100	30	250	22	gravel	304	6	1.25	999.61	205
											gravel	405	10	1.41	407.11	206



DEPARTMENT OF LANDS AND FORESTS, ONTARIO,  
ANNUAL STATE

NUMBER	TOWNSHIPS	NEW CONSTRUCTION							DITCHED
		Cleared and Stumped		Graded and Shaped		SURFACED			
		Length rods	Width, feet	Length, rods	Width, feet	Material	Length, rods	Width, feet	
1	2	3	4	5	6	7	8	9	27
207	Petewawa Township roads.....								
208	Plummer and Plummer Add'l Twp. rds.	200	60	230	20	gravel	60	6	60
209	Prince Township roads.....								80
210	Radcliffe Township roads.....								
211	Raglan Township roads.....								
212	Rama Township roads.....								
213	Ramsay Township roads.....								
214	Ratter Township roads.....								
215	Rayside Township roads.....								320
216	Robinson Township roads.....	320	28	270	20	gravel	60	7	80
217	Rolph Township roads.....								
218	Rose Township roads.....	160	66	120	30				
219	Ross Township roads.....			150	25				
220	Ryde Township roads.....								
221	Ryerson Township roads.....								
222	Sabine Township roads.....								
223	Salter Township roads.....	160	20	320	20				
224	Sandfield Township roads.....								
225	Sebastopol Township roads.....								
226	Shakespeare Township roads.....								
227	Shedden Township roads.....	380	60	210	22				
228	Sheffield Township roads.....								
229	Sheguiandah Township roads.....								35
230	Sherbrooke Township roads.....								
231	Sherwood, Jones and Burns Twp. roads.								
232	Scollard Township roads.....								
233	Sinclair Township roads.....	195	30	58	18				
234	Snowdon Township roads.....								40
235	Somerville Township roads.....								
236	Spence Township roads.....	25	40	30	14	gravel	130	7	50
237	Springer Township roads.....								
238	Stafford Township roads.....								
239	Stanhope Township roads.....	80	66	80	18	gravel	80	6	160
240	Stephenson Township roads.....								
241	St. Edmunds Township roads.....			15	24	gravel	73	7	
242	Stisted Township roads.....								
243	Storrington Township roads.....								
244	Striker Township roads.....	320	20	175	18	gravel	40	6	50
245	Strong Township roads.....	260	40	180	16	gravel	60	6	50
246	Sunnidale Township roads.....								25
247	Tarbutt and Tarbutt Add'l Twp. roads.								180
248	Tarentorus Township roads.....	73	20	149	10	gravel	118	6	
249	Tay Township roads.....								151
250	Tekkummah Township roads.....	50	40	50	26				
251	Thessalon Township roads.....								80
252	Thompson Township roads.....	80	60	80	20	gravel	20	6	85
253	Tiny Township roads.....								286
254	Tudor and Cashel Township roads.....								
255	VanKoughnet Township roads.....	886	30	850	21				60
256	Verulam Township roads.....								
257	Vespra Township roads.....								
258	Victoria Township roads.....								40

## COLONIZATION ROADS—Continued.

MENT, 1920-1921.

BRIDGES			CULVERTS		CUT AND FILL		MAINTENANCE								MILEAGE	EXPENDITURE	NUMBER
Number	Span	Material	Number	Material	Material	Cubic yards	Side-brushed		Graded and Shaped		SURFACED						
							Length, rods	Width, feet	Length, rods	Width, feet	Material	Length, rods	Width, feet				
11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	
															\$ c.		
			6	wood	stone	900			275	18	gravel	270	8	1.10	409.75	207	
			1	cedar	earth	30			120	24	gravel	169	5	1.25	1,000.00	208	
			10	cedar	sand	2,003	35	15	36	24	gravel	57	7	.25	499.74	209	
			2	cedar			200	45	1,600	14				5.00	1,020.90	210	
			1	steel			175	15	1,645	16	gravel	300	12	5.25	1,052.12	211	
					sand	274			179	24	gravel	294	6	1.00	1,500.17	212	
			3	cedar					700	18	gravel	600	8	2.75	800.40	213	
			5	wood					1,242	14	gravel	463	6	4.00	1,400.80	214	
2	11	wood	2	wood	stone	125	320	30	310	12				1.00	500.18	215	
							150	10	300	14	gravel	140	7	2.25	1,573.82	216	
			2	wood										1.00	200.30	217	
			1	cedar	earth	1,400								.50	303.63	218	
			4	cedar			1,100	40	450	18	gravel	465	5	1.40	837.37	219	
1	14	wood	13	cedar					160	14	gravel	160	6	3.40	809.81	220	
			5	cedar					300	18	gravel	20	10	.50	300.00	221	
1	12	timber	2	wood	stone	510			80	24				1.00	518.50	222	
			3	stone	stone	1,560	460	24	270	24	gravel	395	7	1.25	600.20	223	
			5	cedar			75	14	1,270	12				2.00	1,447.50	224	
			2	wood	earth	280			80	22	gravel	310	6	4.00	839.75	225	
			5	wood	earth	350								1.00	700.50	226	
			1	metal	earth	125			10	14	gravel	18	8	1.25	600.00	227	
			1	wood	stone	230	80	12	150	20	gravel	305	7	1.00	100.00	228	
			9	cedar			300	40	350	18				1.00	800.55	229	
							820	14	1,215	14				1.10	421.11	230	
			3	wood					234	12	gravel	120	6	4.00	1,303.90	231	
														.75	400.01	232	
														.60	500.00	233	
			2	wood	rock	44	80	20	270	16	gravel	128	6	2.00	500.00	234	
							65	20	130	20	gravel	306	5	1.00	500.00	235	
1	12	tamarac	5	cedar	stone	6	80	40			gravel	640	6	2.50	618.00	236	
			8	cedar	stone	240	595	16	330	14	gravel	460	6	5.00	3,103.25	237	
			2	cedar	earth	200			198	30	gravel	228	8	1.00	595.46	238	
			6	stone	rock	25			75	18	gravel	95	6	2.25	527.82	239	
			2	cedar					150	20	gravel	300	5	1.00	499.75	240	
					stone	235								.25	698.75	241	
			2	stone	stone	1,100			60	18	gravel	65	5	.25	750.92	242	
			5	metal	rock	20			8	16	gravel	326	8	1.10	750.10	243	
			6	wood	earth	400								2.00	710.95	244	
			9	cedar	rock	80								1.10	745.31	245	
					clay	2,500					gravel	272	7	1.00	400.10	246	
			7	tile			250	20			gravel	50	5	.80	351.25	247	
					stone	117								.40	300.00	248	
			1	wood	clay	3,142								.40	1,010.00	249	
1	12	wood	5	wood	earth	230	580	12	200	24	gravel	545	7	2.50	1,204.24	250	
					stone	80			295	22	gravel	205	6	1.00	498.57	251	
					earth	100			620	20	gravel	340	5	2.25	1,011.08	252	
			1	metal	rock	86			42	10	gravel	348	7	1.25	734.30	253	
			5	cedar	stone	240	1,280	30	30	14	gravel	250	6	4.00	641.95	254	
1	32	R'pd	8	cedar	earth	1,955					gravel	309	7	4.50	2,960.24	255	
					stone	615	28	12	12	20				.25	300.20	256	
			1	conc'te	clay	680			59	16	gravel	118	7	.50	511.10	257	
1	Rp'd	wood	7	wood	earth	35			550	20	gravel	280	6	1.75	550.37	258	

DEPARTMENT OF LANDS AND FORESTS, ONTARIO,  
ANNUAL STATE

NUMBER	TOWNSHIP	NEW CONSTRUCTION							DITCHED
		Cleared and Graded		Graded and Shaped		SURFACED			
		Length, rods	Width, feet	Length, rods	Width, feet	Material	Length, rods	Width, feet	
1	2	3	4	5	6	7	8	9	10
259	Wallbridge Township roads.....			440	18				24
260	Waters Township roads.....								12
261	Watt Township roads.....	200	20	200	16				
262	Wells Township roads.....	80	40	80	22	gravel	60	6	
263	Westmeath Township roads.....								
264	Widdifield Township roads.....	1,000	40	170	18	gravel	30	10	
265	Wilberforce Township roads.....								220
266	Wilson Township roads.....								80
267	Wollaston Township roads.....								
268	Wylie Township roads.....								
	Total.....	21,314		21,647			4,061		17,488

## COLONIZATION ROADS BRANCH.

MENT, 1921-1922.

BRIDGES			CULVERTS		CUT AND FILL		MAINTENANCE									EXPENDITURE	NUMBER
Number	Span	Material	Number	Material	Material	Cubic Yards	Side-brushed		Graded and shaped		SURFACED			MILEAGE			
							Length, rods	Width, feet	Length, rods	Width, feet	Material	Length, rods	Width, feet				
11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	
2	12	cedar	13	cedar	stone	380	.....	..	.....	..	.....	.....	..	1.50	942.12	259	
1	125	cedar	2	cedar	clay	225	6	33	.....	..	gravel	420	9	1.50	550.50	260	
.....	.....	.....	4	stone	stone	400	.....	..	.....	..	.....	.....	..	.62	499.99	261	
.....	.....	.....	5	wood	gravel	20	.....	..	.....	..	gravel	80	5	.50	754.57	262	
.....	.....	.....	2	cem'nt	.....	.....	.....	..	.....	..	gravel	800	10	2.50	800.04	263	
.....	.....	.....	21	cedar	.....	.....	110	20	1,364	18	gravel	615	..	9.00	3,227.85	264	
.....	.....	.....	6	cedar	rock	417	600	20	1,680	14	gravel	1,200	8	7.50	2,196.12	265	
1	40	cedar	1	cedar	rock	3	168	30	280	16	gravel	48	6	1.00	505.77	266	
.....	.....	.....	1	cedar	.....	.....	.....	..	.....	..	c.stone	127	7	.40	299.50	267	
.....	.....	.....	.....	.....	.....	.....	500	16	700	14	.....	.....	..	2.20	501.05	268	
62	.....	.....	1,284	.....	.....	100,566	31,825	..	100,263	..	.....	78,316	..	615.29	\$293,540.26		



## SCHEDULE SHOWING THE AMOUNT OF WORK OF ROAD CONSTRUCTION,

NUMBER	TOWNSHIPS	CLEARED AND STUMPED		GRADED		SURFACED		
		Length, rods	Width, feet	Length, rods	Width, feet	Material	Length, rods	Width, feet
1	2	3	4	5	6	7	8	9
1	Admaston By-law No. 249.....			950	20	gravel	1,300	8
2	Albermarle By-law No. 590.....	20	12			gravel	780	5
3	Alberton By-law No. "H".....	235	35	182	40	gravel	466	5
4	Armstrong By-law No. 8.....			1,220	28	gravel	255	6
5	Assignack By-law No. 440.....	240	24	1,180	24	gravel	840	7
6	Atwood By-law No. 112.....	645	66	196	30	gravel	497	5
7	Bagot and Blythfield By-law No. 339.....	300	30	1,075	15	gravel	1,150	8
8	Balfour By-law No. 67.....	470	15	1,710	12	gravel	4,735	12
9	Belmont and Methuen By-law No. 622.....			50	14	c.stone	796	6
10	Blue By-law No. 55.....	490	66	600	28	gravel	160	8
11	Billings By-law No. 258.....			430	24	gravel	530	7
12	Brethour By-law No. 19.....			800	26	gravel	1,654	6
13	Brougham By-law No. 717.....			1,125	14	gravel	170	8
14	Brudenell and Lyndoch By-law No. 268.....	700	14	1,870	14	gravel	130	8
15	Bucke By-law No. 240.....					gravel	350	6
16	Burleigh and Anstruther By-law No. 1.....			100	14	gravel	288	6
17	Caldwell By-law No. 291.....	247	16	507	14	gravel	1,469	6
18	Calvert By-law No. 27.....	1,813	66	4,825	24	cinders	804	12
19	Calvert By-law No. 12.....	72	24	127	24	cinders	127	8
20	Carling By-law No. 128.....	40	35	65	16	gravel	720	7
21	Carlow By-law No. 126.....			1,463	14	gravel	312	7
22	Carnarvon By-law No. 343.....			495	24	gravel	604	7
23	Carnarvon By-law No. 333.....			460	24	gravel	850	7
24	Casey By-law No. 62.....	360	40	3,000	36	gravel	280	6
25	Casimir, Jennings and Appleby By-law No. 93.....	364	16	2,535	12	gravel	2,161	6
26	Chamberlain By-law No. 72.....			92	16	gravel	302	8
27	Chandos By-law No. 45.....	39	20	807	14	gravel	480	7
28	Chandos By-law No. 58.....			1,240	14	gravel	330	6
29	Chapman By-law No. 8.....			184	16	gravel	649	6
30	Chapple By-law No. 280.....	2,469	66	1,540	28	gravel	2,484	5
31	Chisholm By-law No. 111.....			95	18	gravel	20	10
32	Coleman By-law No. 276.....					gravel	180	6
33	Dilke By-law No. 100.....	40	20	448	28	gravel	356	5
34	Draper By-law No. 401.....	100	30	1,700	18	gravel	584	5
35	Drury, Denison and Graham By-law No. 200.....	660	10	3,225	14	gravel	3,765	7
36	Dymond By-law No. 206.....	100	30	1,475	22	gravel	1,336	6
37	Dysart By-law No. 648.....	2,215	16	3,171	20	gravel	3,828	8
38	Dungannon By-law No. 91.....	80	10	215	18	gravel	40	5
39	Eastnor By-law No. 44.....			70	15	gravel	1,003	5
40	Eldon By-law No. 520.....	35	10	1,297	20	gravel	1,214	6
41	Elzevir By-law No. 55A.....			107	14	gravel	395	6
42	Emo By-law No. 250.....	260	40	381	28	gravel	2,226	5
43	Faraday By-law No. 121.....			60	20	gravel	438	6
44	Ferris By-law No. 108.....			880	16	gravel	300	8
45	Front of Leeds and Lansdowne By-law No. 762.....			920	18	c.stone	2,380	8
46	Glackmeyer By-law No. 13.....	304	25	6,877	24	clay	3,375	8
47	Gillies By-law No. 1.....	1,420	40	1,390	18	gravel	345	7
48	Gordon and Allan By-law No. 167.....	80	12	320	24	gravel	1,318	8
49	Grattan By-law No. 284.....	100	20	2,420	15	gravel	930	8
50	Hagarty and Richards By-law No. 116.....	475	25	1,900	14	gravel	850	7
51	Hanmer By-law No. 107.....			2,880	16			
52	Harley By-law No. 271.....			3,370	24	gravel	788	16
53	Harvey By-law No. 367.....	730	20	1,461	24	gravel	1,175	7
54	Hilliard By-law No. 129.....	80	20	420	25	gravel	2,116	6
55	Hilton By-law No. 411.....	110	16			gravel	656	6

## COLONIZATION ROADS BRANCH, MUNICIPAL BY-LAWS, 1921.

DITCHED	CUT OR FILL		BRIDGES			CULVERTS		NEW ROAD MILEAGE	OLD ROAD MILEAGE	GOVERNMENT EXPENDITURE	NUMBER
Length, rods	Material	Amount in Cu. yards	Number	Span, feet	Material	Number	Material				
10	11	12	13	14	15	16	17	18	19	20	21
										\$ c.	
	rock	10							5.00	999.87	1
	earth	108	1	12	plank	4	metal	.25	2.50	687.32	2
						5	cedar		2.00	1,078.79	3
155	earth	360	1	repa	ired	7	wood		4.25	500.00	4
	clay	264				2	metal	1.50	4.00	1,500.00	5
						7	metal		2.00	1,277.50	6
2,273			4	re-fl	oored	58	cedar		4.00	924.20	7
									14.50	1,909.45	8
									3.00	598.92	9
136	earth	318				6	wood	1.25	1.00	1,132.50	10
30	earth	37	1	re-fl	oored	7	wood		2.00	700.00	11
	clay	600	1	re-fl	oored	7	tamarac		7.00	2,216.67	12
									4.00	500.00	13
						11	cedar	.06	6.00	1,000.00	14
									1.10	499.68	15
	stone	13				1	cedar		1.00	250.00	16
156						14	plank		5.00	1,495.29	17
840	clay	10,209	1	14	wood	19	wood	9.00	11.50	7,421.25	18
68						6	wood		.50	953.00	19
						2	concrete	.38	1.60	500.00	20
						14	cedar		5.00	750.00	21
	stone	45	2	re-fl	oored	5	metal		3.00	700.00	22
	earth	415				2	wood		3.00	700.00	23
380	clay	180	2	16	Rep.	5	tamarac	1.75	8.50	1,058.95	24
5,102						46	wood	.25	10.00	1,700.00	25
40	clay	379	2	25	wood	32	M.&W.		1.00	527.42	26
116	stone	134				1	cedar	.12	4.00	650.00	27
180	earth	6				4	cedar		8.00	400.00	28
						10	cedar		2.50	500.00	29
400	clay	1,711	1	11	wood	36	wood	7.00	8.00	7,500.00	30
50						2	cedar		.30	200.00	31
	clay	50				1	cedar		.60	271.21	32
110	clay	30				3	cedar		2.00	552.67	33
	stone	161				52	cedar		6.00	1,000.00	34
1,890	clay	265	2	16	cedar	15	cedar		12.50	2,359.46	35
40	clay	720				10	cedar		8.00	2,494.30	36
240	clay	950				32	wood	.75	22.00	4,999.69	37
	stone	132				3	cedar		1.00	300.00	38
			1	22	cedar	12	cedar		3.50	1,000.00	39
	rock	27				6	tile		7.00	1,994.12	40
35									1.40	500.00	41
180	clay	170				7	wood		8.00	3,024.57	42
	stone	943				1	concrete		1.50	450.00	43
40						19	cedar		3.00	1,000.00	44
									7.05	1,320.00	45
589	clay	494	3	12	wood	23	wood	1.00	22.00	9,984.52	46
290	clay	1,730				37	wood	1.25	5.00	1,000.00	47
						3	metal		4.50	1,240.14	48
						11	tile		8.00	1,500.00	49
						4	cedar		7.00	1,000.00	50
						2	cedar		9.00	722.95	51
	stone	20				14	cedar		11.75	1,484.70	52
	stone	166				5	concrete		8.00	1,000.00	53
180	clay	1,395				12	cedar		7.75	2,745.51	54
130	stone	90	2	repa	ired	4	wood		2.25	675.00	55

## SCHEDULE SHOWING THE AMOUNT OF WORK OF ROAD CONSTRUCTION

Number	TOWNSHIP	CLEARED AND STUMPED		GRADED		SURFACED		
		Length, rods	Width, feet	Length, rods	Width, feet	Material	Length, rods	Width, feet
1	2	3	4	5	6	7	8	9
56	Himsworth South By-law No. 71B.....			320	18	gravel	180	6
57	Howland By-law No. 169.....	40	12	320	24	gravel	815	7
58	Hudson By-law No. 84.....			800	24	gravel	230	6
59	Hungerford By-law No. 247.....			87	14	gravel	521	6
60	Humphrey By-law No. 371.....	160	20	160	18	gravel	160	7
61	Humphrey By-law No. 361.....			40	16	gravel	70	7
62	Huntingdon By-law No. 430.....			382	14	gravel	450	7
63	Jocelyn By-law No. 310.....	170	8			gravel	595	6
64	Johnson By-law No. A105.....	80	20	240	30	gravel	470	6
65	Kerns By-law No. 182.....			60	20	gravel	1,540	6
66	Korah By-law No. 213.....	666	16	4,210	24	gravel	3,008	7
67	Korah By-law No. 194.....	341	16	2,000	20	slag	898	7
68	Laird By-law No. 133.....			350	24	gravel	1,055	5
69	Lavalle By-law No. 216.....	1,277	66	1,555	20	gravel	1,358	5
70	Limerick By-law No. 3.....			105	16	gravel	309	5
71	Lindsay By-law No. 322.....	150	12			gravel	1,055	5
72	Macaulay By-law No. 80.....	50	20	730	20	gravel	380	5
73	Machar By-law No. 574.....	260	20	255	20	gravel	233	1
74	Madoc By-law No. 50.....			476	18	gravel	775	7
75	Mara By-law No. 580.....	98	7	943	26	c. stone	757	6
76	Marmora and Lake By-law No. 552.....			172	18	gravel	408	7
77	Martland By-law No. 145.....	653	8	729	12	gravel	695	6
78	Matchedash By-law No. 209.....			386	16	gravel	545	7
79	Mayo By-law No. 345.....			208	18	gravel	133	7
80	McDonald, Meredith and Aberdeen Additional By-law No. 152.....					gravel	1,055	6
81	McDougall By-law No. 176.....	20	40	4,332	15	gravel	2,268	8
82	McLean By-law No. 456.....			70	20	gravel	70	5
83	Medora and Wood By-law No. 354.....	900	10	980	18	gravel	196	5
84	Monck By-law No. 476.....			2,200	18	gravel	687	5
85	Monteagle and Herschel By-law No. 506.....			504	20	gravel	305	7
86	Morley By-law No. 218.....	1,360	66	854	30	gravel	970	5
87	Muskoka By-law No. 296.....	30	30	2,060	18	gravel	625	5
88	Nairn By-law No. 120.....	40	12	60	24	gravel	185	7
89	Neebing By-law No. 395.....	1,235	40	1,800	24	shale	740	7
90	Neelon and Garson By-law No. 148.....			100	24	gravel	868	8
91	O'Connor By-law No. 84.....	1,419	40	1,654	24	gravel	172	7
92	Olden By-law No. 60B.....	75	8	2,318	16	gravel	830	8
93	Oliver By-law No. 192.....	740	15	910	24	shale	910	7
94	Oro By-law No. 459.....			172	18	gravel	845	6
95	Paipoonge By-law No. 176.....	2,400	20	2,920	20	gravel	2,520	7
96	Perry By-law No. 159.....	110	40	150	20	gravel	130	7
97	Perry By-law No. 152.....			155	15	gravel	155	6
98	Plummer Additional By-law No. 171.....	40	8	440	20	gravel	1,548	6
99	Prince By-law No. 84.....	92	10	400	20	gravel	190	7
100	Rama By-law No. 390.....			236	24	gravel	388	6
101	Rear of Yonge and Escott By-law No. 596.....			300	16	stone	285	9
102	Ryerson By-law No. 457.....	40	33	640	20	gravel	80	7
103	Sandfield By-law No. 251.....			510	24	gravel	255	7
104	Sebastopol By-law No. 303.....	150	15	600	12			
105	Sheffield By-law No. 659.....			275	16	gravel	1,341	8
106	Sherwood Jones and By-law No. 20.....	1,800	12	2,525	18			
107	Shuniah By-law No. 456.....	1,440	20	7,610	18	gravel	2,221	7
108	Somerville By-law No. 730.....	98	20	538	18	gravel	1,058	6
109	South Crosby By-law No. 884.....			275	20	stone	775	8

COLONIZATION ROADS BRANCH, MUNICIPAL BY-LAWS, 1921.—*Continued.*

DITCHED	CUT OR FILL		BRIDGES			CULVERTS		NEW ROAD MILEAGE	OLD ROAD MILEAGE	GOVERNMENT EXPENDITURE	NUMBER
	Material	Amount in cubic yards	Number	Span, feet	Material	Number	Material				
10	11	12	13	14	15	16	16				
34	stone	270				4	cedar	1.00	250.00	56	
70	stone	40				7	wood	2.75	1,100.00	57	
						10	cedar	3.40	600.00	58	
	earth	140				2	cedar	2.00	696.65	59	
	rock	2				2	cedar	.50	500.00	60	
								.25	225.00	61	
								1.75	300.00	62	
114	earth	200	2	15	wood			2.00	600.00	63	
100	stone	30				5	wood	1.50	449.81	64	
	clay	740	4	33	cedar	11	cedar	5.00	2,393.61	65	
1,115	earth	2,390	3	repa ired		11	metal	.25 15.00	3,707.50	66	
35	rock	3	2	repa ired		2	cedar	13.00	3,471.93	67	
	stone	100						3.50	1,147.77	68	
217	clay	1,127				14	wood	2.25 6.00	3,112.50	69	
	earth	135				1	concrete	1.00	400.00	70	
								3.50	1,250.00	71	
	earth	375				30	cedar	2.50	750.00	72	
	stone	135				5	cedar	.30 1.00	499.75	73	
	earth	569				12	metal	2.50	786.05	74	
			1	20	concrete			3.00	1,491.70	75	
200	earth	624				6	metal	1.50	749.66	76	
692			1	16	wood	16	wood	5.00	1,024.57	77	
						3	metal	2.75	792.31	78	
	stone	803				6	cedar	1.00	400.00	79	
20								3.50	799.92	80	
40	earth	240				31	cedar	14.00	3,200.00	81	
						2	cedar	.25	100.00	82	
95	earth	550				29	wood	3.75	1,350.00	83	
	earth	950				45	cedar	7.00	2,000.00	84	
	stone	580				9	cedar	2.00	600.00	85	
102						12	wood	4.50 3.00	2,900.45	86	
7	earth	571				28	wood	8.00	1,000.00	87	
						2	metal	.75	217.46	88	
560	earth	1,900	4	22	cedar	14	cedar	3.25 5.25	5,050.00	89	
160			1	10	cedar	6	cedar	3.00	1,250.00	90	
20	earth	1,400	1	10	wood	33	wood	.90 7.50	1,992.94	91	
160						19	metal	7.25	882.25	92	
460						9	cedar	4.50	1,700.00	93	
	earth	822				1	concrete	3.00	1,000.00	94	
442	gravel	550	1	20	wood	58	wood	2.25 11.75	5,495.96	95	
60	stone	100				13	metal	.25	500.00	96	
								.50	249.62	97	
10			1	12	wood	5	wood	5.00	1,200.00	98	
493	earth	738				19	cedar	3.25	900.00	99	
								1.25	649.21	100	
						3	tile	1.00	600.00	101	
						2	cedar	.25 2.00	333.50	102	
								1.75	400.00	103	
						4	metal	2.00	265.00	104	
						9	metal	4.50	898.96	105	
						2	wood	8.00	800.00	106	
125	earth	600	5	16	cedar	25	wood	2.00 19.00	4,450.00	107	
160	stone	835				3	concrete	4.00	12,00.00	108	
								2.50	749.75	109	



## SCHEDULE SHOWING THE AMOUNT OF WORK OF ROAD CONSTRUCTION,

NUMBER	TOWNSHIPS	CLEARED AND STUMPED		GRADED		SURFACED		
		Length, rods	Width, feet	Length, rods	Width, feet	Material	Length, rods	Width, feet
1	2	3	4	5	6	7	8	9
110	Springer By-law No. 315 .....			2,560	14	gravel	579	6
111	Stafford By-law No. 706 .....			1,146	30	gravel	1,034	8
112	Stanhope By-law No. 365 .....			2,378	18	gravel	185	8
113	St. Edmunds By-law No. 225 .....	1,100	20	50	24	gravel	562	6
114	St. Joseph By-law No. 448 .....	215	16	110	24	gravel	1,644	5
115	Stephenson By-law No. 524 .....	1,530	16	2,000	18	gravel	865	5
116	Tarbutt and Tarbutt Additional By-law No. 29 .....	10	10	310	22	gravel	714	6
117	Tarentorus By-law No. 209 .....	1,579	20	640	16	gravel	1,605	7
118	Thessalon By-law No. 11 .....			250	20	gravel	285	6
119	Thompson By-law No. 122 .....	80	60	75	22			
120	Tisdale By-law No. 230 .....					stone	740	8
121	Tudor and Cashel By-law No. 5 .....	818	20	183	16	stone	494	6
122	Vespra By-law No. 641 .....			1,284	18	gravel	1,735	6
123	Westmeath By-law No. 264 .....			90	18	gravel	1,076	5
124	Whitney By-law No. 82 .....					gravel	956	10
125	Widdifield By-law No. 311 .....	60	40	880	18	gravel	541	10
126	Wollaston By-law No. 4 .....	42	20	503	18	gravel	395	6
127	Worthington By-law No. 105 .....	14	766	414	28	gravel	149	5
	Total .....	36,808		126,899			107,162	

## COLONIZATION ROADS BRANCH, MUNICIPAL BY-LAWS, 1921.

DITCHED	CUT AND FILL		BRIDGES			CULVERTS		NEW ROAD MILEAGE	OLD ROAD MILEAGE	GOVERNMENT EXPENDITURES	NUMBER
Length, rods	Material	Amount in Cu. yards	Number	Span, feet	Material	Number	Material				
10	11	12	13	14	15	16	17	18	19	20	21
	earth	2,576				3	wood		9.00	784.87	110
						5	wood		5.25	950.00	111
						25	wood		8.00	500.00	112
10						2	cedar		4.00	600.00	113
375	stone	100				3	wood		5.50	1,650.00	114
	rock	2,430	10	14	wood	42	wood		8.00	2,093.75	115
10						2	wood		3.00	500.00	116
366	earth	3,374				12	metal	.50	11.00	3,000.00	117
	earth	150	1	12	concrete	3	metal		1.00	425.00	118
	stone	60				1	wood	.25		100.00	119
									2.30	2,362.80	120
	stone	71				13	cedar		3.25	746.36	121
	clay	5,402				3	concrete		7.00	1,800.00	122
									4.00	1,700.00	123
						6	metal		3.00	2,820.72	124
35	rock	735				16	cedar		3.00	1,500.00	125
	stone	90				3	cedar		2.50	989.44	126
						2	wood	.50	1.00	747.62	127
19,937	.....	54,639	61	.....	.....	1,260	.....	42.01	605.75	176,154.04	....

STATEMENT OF COLONIZATION ROADS BRANCH MACHINERY AND ROAD  
OVERSEER, BY-LAWS 1921.

No.	TOWNSHIP	SERVICE	Government Expend- iture
1	Chapple By-Law No. 298.....	Machinery—8 steel road drags; 4 drag scrapers.....	\$ 98.36
2	Harvey By-Law No. 370.....	Machinery—2 Boss light graders; tile; gravel.....	154.97
3	Lavallee By-Law No. 224.....	Machinery—6 steel road drags.....	55.22
4	Lindsay By-Law No. 323.....	Machinery—1 stone crusher.....	675.00
5	Medora and Wood By-Law No. 368.....	Machinery—1 steam traction engine; 1 rock crusher with screens; 2 road drags; 16 iron culverts; 1 wood water tank with pumps and hose; timber....	889.69
6	Rama By-Law No. 388.....	Machinery—1 traction engine; 1 tank mounted with pump.....	431.25
7	Stephenson By-Law No. 529....	Machinery—lumber; coal; gravel; cement; explosives; tools.....	249.03
		NOTE.—Government Contribution 25%.	
		TOTAL.....	2,553.52

1	Alice and Fraser By-Law No. 7.	Road Overseer—J. M. Kennedy.....	48.00
2	Medora and Wood By-Law No. 366.....	Road Overseer—James Matts.....	150.00
3	Olden By-Law No. 56B.....	Road Overseer—J. A. Cox.....	64.00
4	Palmerston and Canonto By- Law No. 244.....	Road Overseer—J. D. Miller.....	28.40
5	Sheffield By-Law No. 667.....	Road Overseer—Wm. Henry Johnson....	112.00
6	Stephenson By-Law No. 523....	Road Overseer—J. H. Osborne.....	150.00
		NOTE.—Government contribution 40%.	
		TOTAL.....	552.40

MISCELLANEOUS

Inspection.....	\$15,753.61
Engineering, Surveying and Locating Roads.....	6,856.95
Storage of Tools.....	6.00
Balance of Road and Inspection Accounts and Over-expenditures due from 1920.....	4,688.94
Road Machinery, Motor Trucks, etc.....	4,652.25
Compensation to Injured Workmen.....	470.85
Hospital Services for same.....	51.00
Sunnidale Township (Drainage 1920).....	500.00
Sudbury-Soo Trunk Road (Balance of 1916 Contract).....	399.98
Southworth Township; Ignace Crossing.....	1.00
	<u>\$33,380.58</u>

No.	RECAPITULATION	Cleared and Stumped rods	Graded and Shaped rods	Surfaced rods	Ditched rods	Cut and Fill cu. yds.	Bridges number	Culverts number	New Road		Old Road		EXPENDI- TURE	No
									miles	miles	miles	miles		
1	Direct Grants.....	53,472	121,910	82,377	17,488	100,566	62	1,284	75.29	540.00	540.00	540.00	\$ c. 293,540.26	1
2	By-law Grants (Roads)...	36,808	126,899	107,162	19,937	54,639	61	1,260	42.01	605.75	605.75	605.75	176,154.04	2
3	do (Machinery).....												2,553.52	3
4	do (Overseer).....												552.40	4
5	Miscellaneous.....												33,380.58	5
	Total.....	90,280	248,809	189,539	37,425	152,205	123	2,544	117.30	1,145.75	1,145.75	1,145.75	\$506,180.80	





Gravenhurst-Bala Road, Muskoka District.

*Appendix No. 45.*

*To the HONOURABLE BENIAH BOWMAN,  
Minister of Lands and Forests, Ontario.*

SIR,—I have the honour to submit to you the report on the construction and maintenance of highways and bridges, under the provisions of the Northern and North-western Ontario Development Act, 1912, and amendments during the season ending 31st October, 1921.

The report has been prepared in tabulated form, which will be found more convenient for reference, and the districts, or sub-districts, are given in alphabetical order, as follows:

Algoma, Cochrane, Dryden, Englehart, Hearst, Kapuskasing, Kenora, Matheson, Muskoka, Nipissing-Sudbury, Parry Sound, Porcupine, Rainy River and Thunder Bay.

Trunk road construction and maintenance has received considerable attention during the year and the section of the Northern Highway, from Toronto



Severn-North Bay Trunk Road.

to North Bay, under the jurisdiction of this Branch, has been placed in very fair condition by the surfacing of the worst sections with either gravel or crushed stone.

At North Bay this road connects with the Pembroke-Mattawa-Sault Ste. Marie Road, on which many improvements and betterments were effected.

From Sault Ste. Marie eastward, this road is in excellent condition to a point about twenty miles east of Mattawa, and two gangs were engaged in the construction of the portion lying between Mattawa and Chalk River, which has never been opened up. The route being followed is mainly a parallel line to the Canadian Pacific Railway, connecting the various towns and villages. The old construction trail was partially brushed and repaired to provide for local traffic pending the completion of the Highway.

The portion of the Province served by the T. & N.O. Railway, and lying between North Bay and Cochrane, has no connection by road with Southern Ontario, as the Northern Highway, before referred to, only extends to Widdifield, a distance of about 12 miles north of North Bay. From this point to Latchford (Mileage 92) there is a stretch of 80 miles with practically no settlement, lying



"Hymers Hill," Thunder Bay District.

largely within the Temagami Forest Reserve, and no effort has yet been made in the direction of road construction in this area.

From Latchford northwards to Cochrane, there are a few stretches which, when connected up, will provide a continuous highway from the one point to the other. One of these stretches, from Krugerdorf to Swastika, was opened up this year and although not quite completed, vehicular traffic has been made possible between the Cobalt Silver Camp and the Kirkland Lake Gold Camp. Surveys have been made of the remaining portions and preliminary steps taken in regard to further construction.

From Porquis Junction to the Porcupine Gold Camp, approximately 25 miles of new trunk road was cut out to connect Porcupine and Timmins with the Latchford-Cochrane trunk road, and when completed this road will link up the Cochrane and Matheson Agricultural Districts with the mining camps as well as the pulp and paper centre at Iroquois Falls.

The East and West Highway along the Canadian National Railway between



Cochrane and Hearst, is only a series of disconnected stretches of road, at present serving local purposes; additional pieces of construction were carried out and the existing portions improved.

In North-western Ontario there are four sections with a large mileage of roads in each, but without any connection the one with the other, viz.: Thunder Bay, Kenora, Dryden and Rainy River.

Thunder Bay District has a well laid out road system, with the cities of Fort William and Port Arthur as its centre. The five main or trunk roads are: 1. The Eastern Highway, which when completed will connect the Twin Cities with Nipigon, and the route of this road follows closely along the Hydro-Electric pole line as far as construction has progressed, and it is the intention to follow the Hydro line until construction reaches Nipigon, except in the Dorion district, where advantage will be taken of the roads already constructed in that vicinity. II. The North-western Highway, known as the Dawson Road, from Port Arthur

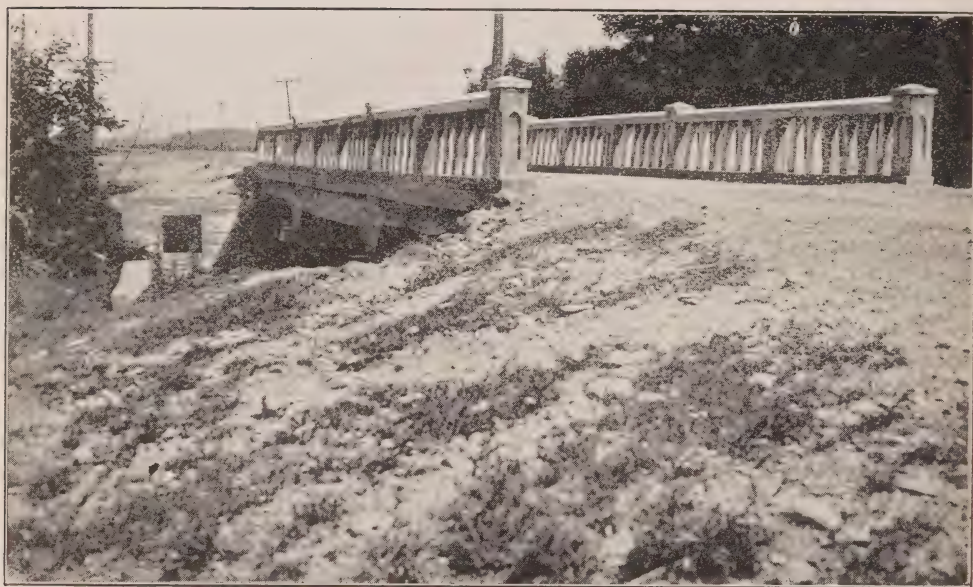


Opening a new road, Rainy River District.

to Kaministiquia. This road was practically reconstructed this year and excellent returns given for the expenditure made. III. The International Highway, connecting the Twin Cities with the Minnesota State Road to Duluth at Pigeon River. Many expensive betterments were made on this road and satisfactory results obtained. A maintenance patrol system was adopted whereby the entire highway was kept in repair and the surface preserved and improved. IV. The Port Arthur Western Highway, known as the Oliver Road, and V., the Fort William Western Highway, known as the Arthur Street Road. These two roads carry a heavy traffic from the Twin Cities to Kakabeka and the flourishing agricultural area west, and many improvements were carried out in surfacing and road drainage.

In Kenora District the Town of Kenora is the hub of a series of roads, each running to one of the outlying parts of the district. The Kenora-Keewatin Road, which carries a heavy motor truck traffic, was resurfaced with crushed stone and good results obtained. The Pellatt Road, Redditt Road, Charlesbois Road, Ritchie Road, Homestake Mine Road and many others of less importance all received attention during the year, and a new road was opened up connecting the Pellatt Road with the Lulu Lake territory.





Bar River Bridge—Algoma District.



Typical Winter Scene, Temiskaming District.

In the vicinity of Dryden, which is a sub-district of Kenora, the Western Highway, which practically parallels the C.P.R., is the principal road, as it is the base of the road system of the district. This road, as well as the northern roads leading therefrom, to or in the direction of the C. N. Railway, received considerable attention during the year, the main highway especially being now in a very fair condition for automobile traffic.

The road system in the Rainy River District has as its base the trunk road from Fort Frances to Rainy River, and the heavy traffic on this road, which includes a motor bus plying between these points, called for a heavy expenditure in maintenance and betterments. The road follows the Rainy River, which is the Ontario-Minnesota boundary, and the country lying to the north of the river being very closely settled for miles away from the river, there is a constant demand not only for new roads, but for the improvement of the existing main or leading roads to the base, on which is situated all the market centres, Devlin, Emo, Barwick, Stratton, Pinewood, and other villages, being all situated on the main Fort Frances-Rainy River Road. Each of these points demands and requires a main artery running northwards, and all have received as good a measure of attention as the appropriation would allow.

In conclusion I would add that a comparatively large portion of the appropriation for each district was this year expended in road drainage, and while this expenditure does not show a great mileage of roads constructed, it would give a large mileage of roads improved, as the maintenance cost on a well-drained system of roads is reduced to a minimum in comparison to the cost on poorly drained roads.

All of which is respectfully submitted.

I have the honour to be, Sir,

Your obedient servant,

C. H. FULLERTON,

*Director, Northern Development Branch.*

Toronto, Ont., October 31st, A.D. 1921.

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## DEPARTMENT OF LANDS AND FORESTS,

## ANNUAL REPORT OF WORK

## ALGOMA DISTRICT.

		Cut- ting		Burn- ing		Stump- ing and Grub'g		Grading		Cross Lay		Ditching		Gravelling	
		L mls.	W ft.	L mls.	W ft.	L mls.	W ft.	L mls.	W ft.	L mls.	W ft.	L ft.	W & D	L mls.	yds. used
	<i>Trunk Rd., Sudbury to S. Ste. Marie</i>														
1	I.—Sault Ste. Marie to Day Mills.	.08 .50	66 12	.08 .50	66 12	.08 .50	66 12	.58 1	25 re	.....	.....	47520 2640 18480	clea deep	red ened	5262 .....
2	II.—Day Milles to Cutler.....	11.	si de	de br	us hing	..	..	6	18	.....	.....	10000 7600 2640	2 x 1 2 x 1 4 x 1	1 2 2	..... ..... 7719
3	III.—Cutler to Copper Cliff.....	5	si de	de br	us hing	..	..	25.50	re	.....	.....	1000 400 400 1320 150	2 x 1 2 1/2 x 1 2 1/2 x 1 3 x 1 3 x 2	1 1 1 1 1	..... ..... ..... ..... .....
4	IV.—Webbwood-Massey Section.....	.....	.....	.....	.....	.5	12	6 .75	30 32	.....	.....	500 600 800	3 x 1 2 x 1 clean	ed	..... ..... .....
5	V.—Diversion near Spanish.....	1.5	66	2.5	66	1.5	30	2	30	.....	.....	400 300 150	3 x 2 3 x 2 2 1/2 x 1	..... ..... 2	..... ..... 1410
				3 mile	s of fence	erect	ed	.....	.....	.....	.....	.....	.....	.....	.....
6	VI.—At Algoma Mills.....	.....	.....	.....	.....	.....	.....	.15	28	.....	.....	1584 1100	3 x 2 4 x 3	.....	225 .....
7	VII.—At Bar River.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
8	VIII.—at Sucker Creek.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	200
9	IX.—At Ladouceur Creek.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	30
10	Desbarats, Kensington Road.....	.....	.....	.....	.....	.....	.....	.75	24	.....	.....	400	.....	.....	1043
11	Goulais Bay Road.....	.1	brushed	.....	.....	.....	.....	.....	.....	.....	.....	125 1995 750	1 1/2 x 1 2 1/2 x 1 3 1/2 x 2	..... ..... .....	..... ..... 472
12	Lorne, Louise Road.....	1.75	40	.....	.....	.5	40	.....	.....	.....	.....	3168 5280 100	2 x 1 2 1/2 x 1 3 x 1	1 1 1	..... ..... .....
13	Wharncliffe Road.....	4 2 2	25 20 brushed	.....	.....	2 1	30 24	.5 2 2.5	28 24 20	.....	.....	30040 13200	2 x 1 3 x 2	1 1	..... .....
	<i>St. Joseph's Island &amp; Camp d'Ours.</i>														
14	I.—General Maintenance.....	.....	.....	.....	.....	.9	14	.....	.....	.....	.....	1870 2310 119	3 x 2 2 1/2 x 2 2 x 1	..... ..... .....	1504 ..... .....
15	II.—Hilton Tp., "W" Line Road.	.13	new road	.....	.....	.....	.....	.....	.....	.....	.....	528	2 x 1	.5	520
16	III.—Fifth Side Road.....	.....	.....	.....	.....	.....	.....	1	18	.....	.....	.....	.....	1.38	1310

## NORTHERN DEVELOPMENT BRANCH.

DONE, YEAR 1921.

Crushed Rock		Drag- ging Miles	Other Rep'rs Miles	Culverts			Bridges		REMARKS	
Yds. crush- ed	L cover- ed			Wood	Stone or Conc.	Met.	Size	No.	Description	
		66		4	repaired				General maintenance.	1
				3	lowered				Repairs and small better- ments, 66 miles.	
						2	15"			
						2	altered			
		51				2	14"		General maintenance.	2
						1	18"		Repairs and small better- ments, 51 miles.	
						3	16"			
						1	26"			
			4				16x12"			
		78				1	24x 8"		General maintenance.	3
						16	24x18"		Repairs and small better- ments 78 miles.	
						2	24x24"			
						1	26x36"			
						2	18x24"			
7785	3.4			1			26x24"		Stone road.	4
						1	26x18"		12' wide, 8" thick.	
										5
		2				1	26x18"			
						1	26x36"		Three diversions elimin- ating five bad hills.	
						2	24x24"			
						1	30x30"			
			4	improved						
3514 c.y.	excava- tion								Constructing subway.	6
782 c.y.	filling									
311 rail	ing					1	30"			
Used for fill							450'x4'x4'	1 Reinforced con- crete, 16'x-16'		7
										8
12 c.y.	stone									9
			1	re-cov- ered				1 Unfinished	Hill cut, 300'x2 Earth fill, 60'x20'x7'. Rock and Gravel fills { 378x3 200x2½ 100x2½ 150x4	10
										11
		4		2			14x6		Rock cut, 15'x4'x3'.	
		.5		12	repaired					
				7	1				Scow repaired and ap- proaches built.	12
				25			20x4	1 Repaired.	88 c.y. stone. 347 c.y. filling.	13
		44		4			16x2x2		Dock built.	14
				4			14x2½x2			
				2			18x2x2			15
										16



## DEPARTMENT OF LANDS AND FORESTS.

## ANNUAL REPORT OF WORK

## ALGOMA DISTRICT.

		Cutting		Burn- ing		Stump- ing and Grub'g		Grading		Cross Lay		Ditching		Gravelling	
		L mls.	W ft.	L mls.	W ft.	L mls.	W ft.	L mls.	W ft.	L mls.	W ft.	L ft.	W & D	L mls.	yds used
17	IV.—"U" Line Road.....	1.25	16	side	d	.25	16	1.25	20					1.25	102
18	V.—Richardson's Creek.....	2	14			2	14	} Creek	k	cleared	ed	for d	rainage	of	road.
		2	16												
19	VI.—"P" Line and 10th Side Rd.							.5	18					1.25	394
	<i>Manitoulin Island.</i>														
20	I.—Gore Bay to Silverwater and	5	66	.75	66	2.25	26	4.25	26			600	3 x2		593
	and					.5	36								
	Silverwater to Meldrum.....	2.88	60	3.25	60	1.25	30	1.25	28						
						1.5	40								
						.25	28	.75	30						
21	Little Current to Sheguindah....	1	32	1	32	1	16	1	16			990	4 x1	2.25	213
	and	.75	66			.75	40	.25	26						
	Kajawan to Gore Bay.....							.75	30						
22	Gore Bay to Long Bay.....	.75	66	.6	50	.75	30	1.5	16					1.5	165
		.6	60			.6	50								
23	Long Bay to Spring Bay.....	3.5	66					2.75	28					2.75	230
24	Spring Bay to Providence Bay...	2	66			2	40	3	28			2640	2 x1½	3.25	352
25	Providence Bay to Mindemoya...													.75	48
26	Around Mindemoya Lake.....							2	30					2	76
27	Sheguindah to Manitowaning...	.75	50					.08	22			300	16x1	1	124
								.13	26						
								1.75	24						
28	Green Bay Road.....	.5	40			.5	40	2	24			246	1½x1½	1	206
												500	2 x1		
29	Little Current to Honora.....	3.5	26					.5	24					2	
30	On Barrie Is and.....							1.25	24					1	5
COCHRANE DISTRICT.															
Township. Location.															
31	Brower: Abitibi S., to line bet. 8&9														
32	Bet. lots 8 and 9, Con. 5.....														
33	Bet. Cons. 2 & 3, lots 9 to 12.....														
34	Bet. Cons. 2 & 3, lots 5 & 6.....	.75	66	.75	66										
35	Bet. Cons. 5 & 6, lots 1 & 2.....	.63	66												
36	Calder: Bet. Cons. 8 & 9, lot 25.....														
37	Bet. Cons. 2 & 3, lot 28, & lots														
	1 & 2.....	.75	66	.75	66			1	33			196	3 x2		
38	On lot 1, Con.1.....											1155	4 x2½		
39	Bet. Cons. 2 & 3, lots 1 & 2.....							.25	24						
40	Calvert: Across pt. Con. 1, lot 10.							.34	33			900	3 x3½		
41	Trunk Road to Iroquois Falls..							1.25	24			1800	re		
												4300	4 x4		
												6600	re		
42	Bet. Cons.1 & 2, lots 9 & 10....	.25	66	.25	66	.25	24					8596			
43	Clergue: Bet. Cons. 4 & 5, lot 5..							.11	24						

## NORTHERN DEVELOPMENT BRANCH.

DONE, YEAR 1921.

[illegible]

## DEPARTMENT OF LANDS AND FORESTS,

## ANNUAL REPORT OF WORK

## COCHRANE DISTRICT

	TOWNSHIP—LOCATION	Cutting		Burning		Stump- ing and Grub'g		Grading		Cross Lay		Ditching		Gravelling	
		L mls.	W ft.	L mls.	W ft.	L mls.	W ft.	L mls.	W ft.	L mls.	W ft.	L ft.	W & D	L mls.	yds used
44	Across pt. Con. 6, lot 10.....							.6	24			2000	4 x3		
45	Clute: Bet. Cons. 10 & 11, lot 26.....														
46	Bet. Cons. 10 & 11, lots 23-26.....	.25	66	.25	66	.2	33	.2	33			244			
						.5	24	1.12	24			759	3½x4½	.1	100
47	Bet. lots 12 & 13, Con. 6.....														
48	Bet. Cons. 2 & 3, lots 3 to 5.....					.1	re	1	re						
49	Bet. Cons. 6 & 7.....							.25	33						
50	Bet. Cons. 2 & 3, lot 28.....							.08	33						
51	Bet. lots 12 & 13, Boundary of Fournier to Frederickhouse.....	.4	66	.4	66			1.4	30			1800	4 x2		
												5808			
												2442	4 x3		
52	Bet. Cons. 6 & 7, lots 13 to 17..											15523			
53	Bet. Cons. 8 & 9, lots 13 to 18..	1	66	1	66							2737			
54	Fauquier: Bet. lots 12 & 13, Cons. 3 to 6.....													2.5	
55	Fournier: Bet. lots 7 & 8, Cons. 5 & 6.....	1	66	1	66										
56	Bet. lots 8 & 9, Con. 6.....	1.25	66	1.25	66			1.25	24			1650	4 x3		
57	Bet. lots 4 & 5, Con. 6.....											990	5 x4		
												10956			
58	Bet. Cons. 5 & 6, lots 1, 2 & 3.....														
59	Bet. lots 10 & 11, Con. 6.....	.37	66	.37	66			.7	24						
60	Fox: Bet. lots 8 & 9, Cons. 1 to 3.....	1.25	66	1.25	66	.82	24					11652			
61	Bet. Cons. 2 & 3, lots 9 to 12.....	1.25	66			1.25	24					16509			
	Bet. lots 4 & 5, Cons. 2 & 3 } ..														
62	Bet. Cons. 3 & 4, lots 3 & 4 } ..			3.1	24	3.1	24					33495			
63	Bet. lots 4 & 5, Cons. 1 & 2.....	1.2	66	1.2	66										
64	Bet. lots 10 & 11, Con. 2.....	1	66	1	66										
65	Bet. Cons. 4 & 5, lots 1, Brower 12 Fox.....											8726			
66	German: Connaught Dam Rep'rs.....														11
67	Glackmeyer: Bet. Cons. 2 & 3, lots 19 to 28.....													2.5	
68	Lamarche: Bet. Cons. 4 & 5, lots 5 & 6.....	.82	66	.82	66	.75	24	.5	24			4735			
69	Bet. lots 4 & 5, Con. 3.....	1	66			1	24								
70	Bet. lots 8 & 9, Con. 6.....											1320		.25	17
71	McCart: Bet. Cons. 2 & 3, lot 4.....	.5	66	.5	66										
72	Bet. Cons. 2 & 3, lot 3.....			.5	24	.5	24					2640			
73	Newmarket: Bet. Cons. 1 & 2, Trunk Road, to Lot 4.....	1	66	1	66	1	24					12341			
74	Trunk Road, lots 4 & 5, Con. 5.....			.75	33	.75	33					8100			
75	Bet. Cons. 4 & 5, lots 3 & 4.....											7950			
76	Bet. Cons. 5 & 6, lots 5 & 6.....											14800			
BOUNDARY LINES.															
77	Blount,—Leitch: Across Con. 1.....							.2	24			660	4 x3		
78	Across Cons. 1, 2 & 3.....							.2	24	.2	24				
79	Blount—Clackmeyer: Across lots 15, 16, 17.....	.2	66	.2	66			.2	24	.2	10	1188	4 x4		
80	Brower—Kennedy: Across lots 2 to 9, Brower.....							.33	32			330	3 x3		

NORTHERN DEVELOPMENT BRANCH

DONE, YEAR 1921.

Crushed Rock		Drag- ging Miles	Other Rep'rs Miles	Culverts			Bridges		REMARKS	
Yds. crush- ed	L cov- ered			Wood	Stone or Conc.	Met.	Size	No.	Description	
				1			16x4x4	1	80x14 (piles).	44
				1			16x3x3			
				1			20x1½x1½			
				2			16x4x3		45 c.yds. hill cutting. 2000 c.yds. filling.	45
				3			16x3x3			46
			.06	2	repaire d					47
				1			16x5x4			48
										49
			1.75	3			20x4x3			50
				2			16x4x3			51
				6			16x3x3			52
										53
										54
				6			16x4x4			55
				5			16x4x2			56
										57
				5			16x3x3			58
				5			16x4x4			
				2			16x3x3			59
										60
										61
				7			16x6x6			62
										63
										64
										65
										66
										67
				4			16x4x3			68
				7			16x3x3			
				2			16x3x3	1	20x6x6.	69
								1	20x16x7.	70
									504 c.yds. hill cutting.	71
									888 c.yds. clay excavation	72
										73
										74
										75
										76
										77
										78
				4			16x4x4			79
			1.9	1			3			80





NORTHERN DEVELOPMENT BRANCH.  
DONE, YEAR 1921.

Crushed Rock		Drag- ging Miles	Other Rep'rs Miles	Culverts			Bridges		REMARKS		
Yds. crush- ed	L cov- ered			Wood	Stone or Conc.	Met.	Size	No.			Description
										81	
										82	
				6			16x3x3 }				
				1			16x2x2 }	1	16x10x5.	1350 c.yds. hill cutting.	83
			.04	1			16x1½x1½ }	1	Repaired.		84
				2			16x4x3 }				85
				2			16x3x3 }				
				11			16x3x3				86
											87
											88
											89
											90
				3			20x4x4 }				
				2			24x4x4 }				
				2			20x4x3	1	20x6x5.		91
				5			16x3x3				92
				4			16x3x3			150 c.yds. hill cutting.	93
				5			16x3x3				94
				4			16x4x3				95
											96
											97
											98
				2				1	30'x 16.		99
											100
											101
				1			28x4x4			100' filling, 10' deep.	102
				1			30x6x6			300' hill cutting, 4' deep.	103
				5						.75 mile earth covered.	104
				11							105
Bridge		1.5 miles of road				earth covered.					106
											107
				19	1						108
											109
											110
											111
		3.5							Hill cut & fill, 120'x36'x4'.		11

## DEPARTMENT OF LANDS AND FORESTS.

## ANNUAL REPORT OF WORK

## DRYDEN DISTRICT

	TOWNSHIP—LOCATION	Cut- ting	Burn- ing	Stump- ing and Grub'g	Grading	Cross Lay	Ditching	Gravelling
		L W mls. ft.	L W mls. ft.	L W mls. ft.	L W mls. ft.	L W mls. ft.	L W & ft. D	L yds. mls. used
113	Trunk Rd., on lot 6, Con. 1, and across lot 7 bet. Cons. 3 & 2.							600
114	Bet. Cons. 2 & 3, lots 4, 5-6.	.5 66	.5 66	.5 35	1.25 22		1000	
	BOUNDARY LINES.							
115	Aubrey—Eton: Lots 1, 2 & pt. 3.							1.25 1026
116	Aubrey—Sandford: Trunk Rd, lots 4 to 11, through lots 11 & 12, Con. 6, Aubrey, and across lot 3, Con. 6, Temple Township.		8 br us h		2 re			4.5 3458
117	Eton—Rugby: lots 2 to 6.	2.5 66		2.5 35	2.5 22		1155	
118	Lots 7, 8 & 9.					.01 16	2343	
119	Eton—Wainwright: Cons. 1, 2 & 3.							2 1642
120	Wainwright—Zealand: Cons. 8 to 10, Zealand.	.9 66	.9 66	.9 35			500	300
121	Wainwright, Britton and Rowell: Dryden—Richan Road.	2.5 66			2 22		3144	
122	Trunk Road from Wabigoon in Zealand Twp. to Quibell in Wabigoon Twp.							
	ENGLEHART DISTRICT.							
123	Beauchamp: On lot 9, Con. 4.	48,	17 7 ft.	B. M. of bridge tim er, cut, skidd ed an dhauled—a				
124	Catharine: On lot 3, Con. 3.							
125	Chamberlain: On lot 1, Con. 6.		Grade s reduce d	on app ro ache st o Kru gersd orf B ridge				
126	Bet. Cons. 5 & 6 lot 5.							
127	Bet. Cons. 2 & 3, lot 8.							
128	Bet. Cons. 1 & 2, lot 8.				.5 20			
129	Dack: Bet. lots 8 & 9, Con. 2.		Grade s redu ce don tw o hills.					
130	Bet. lots 8 & 9, Con. 3.		Grade s redu ce don tw o hills.					
131	Evanturel: On lot 9, Con. 4.	.25 12	.25 12	.25 10			1320 3 x3	
132	Bet. Cons. 5 & 6 lot 12.				.5 30			
133	Gauthier: Larder Rd. to Argo Mine							
134	Ingram: Bet. lots 10 & 11 across Cons. 4 & 5.	2	66 2	66 in pa rt				
135	Bet. Cons. 3 & 4 across lots 3 & 4.		Str aig ht ening	wate r co ur se and build ing dam...			2340 3 x2	
136	Bet. Cons. 1 & 2, lot 8.							
137	Lorrain: N. Cobalt to Paradis Bay.							
138	Bet. lots 4 & 5 across lot 11.			.5 20	.5 15			
139	Marter: Bet. lots 10 & 11, Con. 2.		App ro ac hes to	ste el b ri dg e re -con str uct ed and g ra des				
140	Bet. lots 4 & 5, Con. 4.							
141	Bet. Cons. 4 & 5, lot 3.				.5 28			
142	Pacaud: Bet. lots 6 & 7, Con. 2.	1	66					
143	Robillard: Bet. Cons. 5 & 6, lots 6 & 7.	.5 66		.75 20	.75 18			
144	Savard: Bet. Cons. 2 & 3, lot 3.							
145	Bet. Cons. 3 & 4, lot 12.				.5 20			
146	Sharpe: Bet. Cons. 1 & 2, lots 1 & 2.				.1 20			
147	Bet. Cons. 2 & 3, lots 2 & 3.				2 30	Gra de reduc ed on seven hills.		

## NORTHERN DEVELOPMENT BRANCH.

DONE, YEAR 1921.

Crushed Rock		Drag- ging Miles	Other Rep'rs Miles	Culverts			Bridges		REMARKS	
Yds. crush- ed	L cov- ered			Wood	Stone or Conc.	Met.	Size	No.	Description	
									.25 mile clay covered...	113
				3						114
										115
										116
				7						117
			1.25						1 mile sidebrushed, 12' wide.	118
										119
			1.75	6				2	With fills and approaches.	120
			11	90			16x4x2		339 c.yd. in fills.	121
				11			16x9x3		1401 c.yd. clay covered.	121
		55								122
also 75 piles and			10 pieces		special	bridge	timber.			123
								1	18' span renewed.	124
								1	60' " (timber)	125
								1	38' " "	126
								1	20' " "	127
				2			16x3x2			128
								1	Repaired.	129
										130
				1			16x3x2			131
			6.75							132
										133
										134
										135
			9					3	Recovered	136
reduced.				1			16x3x3			137
reduced.										138
				1	remov ed			1		139
										140
										141
				1			16x5x4 }			142
				2			16x4x3 }			143
								1	30' span.	144
										145
				1			16x8x3			146
				3			16x3x3			147
				2			16x8x3			
				1			16x12x5			
				1			16x6x5			
				1			30x6x5			
				1			30x3x2			



## DEPARTMENT OF LANDS AND FORESTS.

## ANNUAL REPORT OF WORK

## ENGLEHART DISTRICT.

	TOWNSHIP—LOCATION	Cutting		Burning		Stump- ing and Grub'g		Grading		Cross Lay		Ditching		Gravelling	
		L mls.	W ft.	L mls.	W ft.	L mls.	W ft.	L mls.	W ft.	L mls.	W ft.	L ft.	W & D	L mls.	yds. used
148	Sharpe: Bet. lots 2 & 3, Cons. 3, and Cons. 3 & 4, lots 3 to 6.....	3	66	3	66										
149	Bet. lots 2 & 3, across Con. II, and across lots 2 & 3.....	1.25	66	1.25	66										
	BOUNDARY LINES.														
150	Catharine—Pacaud: Cons. 1, 2, & 3.....														
151	Dack—Evanturel: Cons. 3 & 4.....														
152	Evanturel—Ingram: Cons. 5.....														
153	Evanturel—Marter: Lot 10.....														
154	Robillard—Savard: Lots 11 & 12.....														
155	Lot 5.....														
156	Robillard—Truax: Cons. 6.....														
157	Savard—Sharpe: Cons. 1 & 2.....														
158	Con. 4.....														
159	Sharpe—Truax: Lots 1 & 2.....														
160	Rd. from Elk Lake to Matachewan														
161	“ Dane to Larder Lake.....														
162	“ Boston Creek to Skead.....	4.01	18	4.01	18	4.01	18	4.01	16	.25	16	6090		.3	
163	“ Swastika to Kirkland L.														
164	Branch Road from Swastika to Coal Chutes.....											60		.14	291
165	Latchford—Cochrane Trunk Rd., Krugerdorf to Swastika.....	10.5	66	9.2	66	2.3	33	9.4	26	2.1	22	13980		2	Concrete
166	Rd. from Krugerdorf to Miller Ind. Mine.....	2.4	58	2.25	66	8.25	30	2.38	18			4890			
167	“ “ Tough Oakes Mine to Crystal Lake.....					3.54	30	1.	18	.45	16	13654			
168	“ from Rosegrove to Round Lake.....			6.4	66	6.4	22								
169	“ from Boston Creek to Round Lake.....	2.26	66	2.07	66	1.76	30								
170	“ from Charlton to Elk Lake.....									.05	16				
171	“ Elk Lake to Gowganda.....	1.6	66	1.6	66	1.6	22	13.5	16			10667		11.5	
	HEARST DISTRICT.														
172	Casgrain: Bet. Cons. 4 & 5, lots 23 and 24.....	.33	66	.33	66	.33	24					268	3½x1½		
173	Bet. lots 24 & 25, Cons. 4, 5 & 6.....							.6	33			2800			
174	Bet. Cons. 6 & 7, lots 20 to 24.....	1.6	66	.63	66							24235		.5	
175	Bet. lots 18 & 19, Cons. 1 to 6.....													1.5	
176	Bet. Cons. 4 & 5, lot 19.....													.31	
177	Hanlan: Bet. lots 12 & 13, Cons. 1 & 2.....	1.5	66	1.5	66	.75	24					5500			
178	Bet. Cons. 2 & 3, lots 16 to 22.....	1.25	66	1.25	66	1.25	24					11142			
179	Bet. lots 18 & 19, Cons. 3, 4 & 5.....	2.23	66	2.23	66	2.23	24					10139			
180	Bet. Cons. 1 & 2, lots 1 to 8.....	.81	66			1.5	24								

## NORTHERN DEVELOPMENT BRANCH.

DONE, YEAR 1921.

[illegible]

## DEPARTMENT OF LANDS AND FORESTS,

## ANNUAL REPORT OF WORK

## HEARST DISTRICT

	TOWNSHIP—LOCATION	Cut- ting		Burn- ing		Stump- ing and Grub'g		Grading		Cross Lay		Ditching		Gravelling	
		L mfs.	W ft.	L mfs.	W ft.	L mfs.	W ft.	L mfs.	W ft.	L mfs.	W ft.	L ft.	W & D	L mfs.	yds. used
181	Trunk Road, lots 13 to 20.....							.85	re						
182	Kendall: Bet. Cons. 8 & 9, lots 19 to 24.....											19747			
183	Bet. lots 18 & 19, Cons. 7 & 8...	.66	66	.66	66	1.5	24								
184	Bet. lots 24 & 25, Cons. 11 & 12.	.3	24	.3	5							5000			
185	Kendall: Bet. lots 12 & 13, Cons. 7, 8 and 9.....														
186	Bet. Cons. 11 & 12, lots 19 to 22														
187	Bet. lots 24 & 25, Cons. 9 & 10.											1200			
188	Bet. Cons. 10 & 11, lot 19.....														
189	Bet. Trunk Road, lots 24 & 25...											2050			
190	Trunk Road, lots 5 to 23.....														
191	Way: Bet. Cons. 2 & 3, lots 1 to 16	1.6	66	1.6	66	.45	24					53129			
192	Bet. Cons. 10 & 11, lots 3 to 12					.65	24	1	re			4750			
193	Bet. Cons. 8 & 9, lots 2 to 6.....											16746			
194	Bet. lots 6 & 7, Cons. 1 & 2.....	1.5	66												
195	Bet. Trunk Road, lots 3 to 12...							.5	re						
BOUNDARY LINES.															
196	Casgrain—Hanlan: Across Cons. 3 & 4.....					1.5	24								
197	Hanlan—Way: Across lots 8 & 9.	.63	66	.63	66	.63	24								
198	Kendall—Way: Across Cons. 7, 8 & 9.....											7500			
199	Across Cons 3 to 6.....	.75	66			1.73	24					8988			
200	Lowther—Way: Across lots 7 & 9	.63	66												
KAPUSKASING DISTRICT.															
201	Fauquier: Bet. lots 6 & 7, Cons. 3 & 4, and Cons. 4 & 5, lots 6 to 12.....									.1	12	44560			
202	Bet. lots 12 & 13, Cons. 1 & 2...	1.5	66												
203	Bet. lots 6 & 7, Cons. 1 & 2.....	1.5	66	1.5	66										
204	On lots 8 & 10, Con. 5.....														
205	Trunk Road, lots 10, 11 & 12...											15060			
206	Trunk Road, M.P. 50½ to 57...			.5	28	.5	28					5280			
207	Trunk Road, M.P. 57 to 62½...											71080			
208	O'Brien: Bet. lots 25 & 26, Cons. 11 & 12.....	.5	66	1.	66	1.	24	.5	24			7000			
209	Bet. Cons. 10 & 11, lots 19 to 24											5280	re		
210	Bet. lots 24 & 25, Cons. 9 & 10.											2640	re		
211	Bet. lots 18 & 19, Cons. 11 & 12.														
212	Trunk Road, M.P. 65½ to 69½...											13200	ic		
213	O'Brien & Owens: Trunk Road, M.P. 69½ to 73.....														
214	Owens: Trunk Road, lots 4 & Con. 13.....			.5	28	.5	28	.5	26			5000			
215	Shackleton: Bet. lots 24 & 25, Cons. 8 to 11.....	2	66			3	24					47240			
216	Trunk Road, M.P. 42 to 46.....	4	66	4	66	4	28					41060			
217	Trunk Road, M.P. 46 to 49½														
218	At Ground Hog River Crossing														

Sewer and cable repaired and culverts repaired on

## NORTHERN DEVELOPMENT BRANCH.

DONE, YEAR 1921.

[illegible]



## DEPARTMENT OF LANDS AND FORESTS.

## ANNUAL REPORT OF WORK

## KAPUSKASING DISTRICT.

TOWNSHIP—LOCATION		Cutting		Burn- ing		Stump- ing and Grub'g		Grading		Cross Lay		Ditching		Gravelling	
		L mls.	W ft.	L mls.	W ft.	L mls.	W ft.	L mls.	W ft.	L mls.	W ft.	L ft.	W & D	L mls.	yds. used
	BOUNDARY LINES.														
219	Fauquier—Nansen: Across lots 7 to 12.....	1.75	66												
	KENORA DISTRICT.														
220	Jaffray & Mellick: Main East Mellick Rd. (Pelletier Branch) East Charlesbois Road.....	.5	40	.5	40	.5	40	.5	16			2640	3 x1		461
221	Con. 1, lot 2, Con. 2.....	.6	40	.6	40	.4	30	.3	18	.1	14	1700	3 x2		130
222	Con. 2, lot 1, Con. 3.....			.3	40	.5	40	.3	40	.3	15	2080	3 x1½		1050
223	Con. 3, lot 2, and J.A. 3.....					.4	30	1.0	20						2600
224	Coker Road, lots 5, 6 & 7, Con. 3.....	.4	30			.4	30	.3	12	.1	14	1600	4 x1		
225	Pellatt: Branch to Lulu Lake.....	1.66	66	1.66	66	1.66	30	2.25	16			2490	3 x2		1600
226	Pellatt Road.....							12	re						40
227	Keewatin westwards.....					.51	30					3000	3 x8		910
228	Kenora-Keewatin Road.....											4650	2 x1½		235
229	Redditt: Kenora-Redditt Road... I, on lots 5 & 6 Con. 5.....	.8	40	.8	40										
230	II, lots 12, 13, 14, Cons. 4, 5.....	3.5	40	3.75	40	1.75	40	1.5	18	.1	16	1995	3 x1		200
231	Beatty: Bet. lots 11 & 12, Cons. 1 & 2.....					.8		2	22			900	3 x2		
232	Bet. lots 9 & 10, Con. 3.....							1	22			200	3 x2		
233	Benoit: Bet. lots 6 & 7, Con. 2.....							1	22			500	3 x2		
234	Bet. Cons. 5 & 6, lots 3 to 9.....	2.63	66	1.63	66										
235	Bond: Bet. lots 2 & 3, Cons 3 & 4.....							1.76	22			662	3 x2		
236	Bowman: Bet. Cons. 4 & 5, lots 11 & 12.....							1	22			150	3 x2		
237	Bet. Cons. 5 & 6, lot 10.....					.5	33	.5	22						
238	Bet. Cons. 3 & 4, lots 7 & 8.....					1	26								
239	Bet. lots 6 & 7, Con. 3.....	1	66	1	66										
240	Bet. lots 2 & 3, Con. 3.....					1	26								
241	Carr: Bet. lots 4 & 5, Con. 1.....														
242	Bet. Cons. 3 & 4, lots 1 to 4.....							2	re						
243	Bet. Cons. 5 & 6, lots 5 to 9.....							2.5	re						
244	Bet. lots 4 & 5, Cons 1 to 6.....	Filled		was		houts		at	culver	ts	and	bridge	appro	aches	
245	Bet. Cons. 2 & 3, lots 4 & 5.....	Filled		was		houts		at	culver	ts	and	bridge	a	pproa	ches
246	Bet. lots 2 & 3, Cons. 1 & 2.....														
247	Bet. lots 2 & 3, Cons. 5 & 6.....	.88	66	.88	66	1.38	33								
248	Bet. Cons. 4 & 5, lots 9 & 10.....	1	66	1	66	1	33	.73	22			300	3 x2		
249	Bet. Cons. 3 & 4, lots 5 & 6.....							1	22			200	3 x2		
250	Clergue: Bet. Cons. 2 & 3, lots 2 & 3.....							1	22			300	3 x2		
251	Bet. lots 2 & 3, Con. 1.....					1	26								
252	Currie: Bet. Cons. 4 & 5, lot 1.....														
253	Bet. Cons. 4 & 5, lot 5.....					.5	33	.5	22			300	3 x2	.1	
254	Hislop: Bet. Cons. 1 & 2, lot 5.....														
255	On lot 6, Con. 2.....														

## NORTHERN DEVELOPMENT BRANCH.

DONE, YEAR 1921.

Crushed Rock		Drag- ging Miles	Other Rep'rs Miles	Culverts			Bridges		REMARKS	
Yds. crush- ed	L cover- ed			Wood	Stone or Conc.	Met.	Size	No.	Description	
										219
										220
				2			16x2x1 $\frac{3}{4}$			221
				1			18x4x1 $\frac{3}{4}$			222
				1			20x3x2			223
			.25	5						224
				2			18x2x2			225
				4			18x2x2			226
				10					Washouts repaired.	227
				6	repaired				Filling, 300'x 26'x 3'.	228
			1.2		1	3				229
106	41								1537 c.yd. rock blasted and used in fills.:	230
1490									2465 c.yd. rock blasted and used in fills.	231
									550 c.yd. filling.	232
									1500 c.yd. rock fill.	233
									69' filling in br. approach.	234
				24			18x2x1		165'x 20'x 4' filling.	235
				8			18x3x2			236
				4			18x3x2			237
				5			18x3x2			238
				11			18x3x2			239
				4			18x4x4			240
				4			18x4x4			241
										242
								1	Pile bridge, 650' long, rebuilt.	243
									40 yards rock repaired washouts.	244
										245
		6								246
		2								247
										248
				8			18x3x2	1	20x16x5.	249
				5			18x3x2			250
					2		28'x 3'			251
				9			16x4x4			252
				1			30x16x6		1270 c.yds. filling.	253
				4			18x4x4			254
								1	144x16x8.	255
								1	Timber truss on piles, 138'x16x8	256

## DEPARTMENT OF LANDS AND FORESTS,

## ANNUAL REPORT OF WORK

## MATHESON DISTRICT

TOWNSHIP—LOCATION		Cutting		Burning		Stump- ing and Grub'g		Grading		Cross Lay		Ditching		Gravelling	
		L mls.	W ft.	L mls.	W ft.	L mls.	W ft.	L mls.	W ft.	L mls.	W ft.	L ft.	W & D	L mls.	yds. used
256	Bet. Cons. 5 & 6, lot 10.....														
257	Bet. Cons. 1 & 2, lots 1 to 5....	2.5	66	2.5	66										
258	Bet. Cons. 5 & 6, lots 2 & 3....							1	22			100	3 x2		
259	Bet. lots 9 & 10 Cons. 2 & pt. 3....							1.5	22			2000	4 x3		
260	Bet. lots 3 & 4, Con. 5.....							1	22			400	3 x2		
261	Bet. lots 9 & 10, Con. 1.....	1	66	1	66	1	26	1	22			1500	4 x3		
262	Bet. lots 5 & 6, Con. 1, and bet. Cons. 1 & 2, lots 4 & 5.....					1.75	26	1.75	66			700	3 x2		
263	Playfair: Bet. lots 1 & 2, Cons. 2 & 3.....	1.25	66	1.25	66	1.25	33	2	22			1000	4 x3		
264	Bet. Cons. 5 & 6, lot 12.....	.25	66	.25	66	.25	33								
265	Bet. Cons. 4 & 5, lots 7 to 10....					.75	26								
266	Stock: Bet. Cons. 5 & 6, lots 8 to 12.....	2.5	66	2.5	66										
267	Bet. Cons. 3 & 4, lots 1 & 2.....					1	33								
268	Taylor: Bet. lots 2 & 3, Cons. 1 & 2							2	re						
269	Bet. Cons. 3 & 4, lot 3.....														
270	Bet. Cons. 1 & 2, lots 11 & 12....							1	22			200	3 x2		
271	Bet. lot 10 & 11, Con. 2.....	1	66	1	66	1	33	1	22			400	3 x2		
272	Bet. lots 2 & 3, Con. 3.....	.75	66	.75	66	.75	33	.75	22			200	3 x2		
273	Bet. Cons. 3 & 4 lots 1 & 2.....							1	22			400	3 x2		
274	Bet. Cons. 5 & 6, lots 1, 2 & 3....	1	66	1	66	1	26								
275	Bet. lots 10 & 11, Cons. 3 & 4....					1.75	26								
276	Bet. lots 8 & 9 Con. 3.....	.88	66	.88	66	.31	26								
277	Bet. lots 8 & 9, Con. 6.....							.5	22						
278	Bet. Cons. 4 & 5, lots 7 & 8.....							1	re						
279	Walker: Bet. lots 4 & 5, Con. 1 & 2							2	22			400	3 x2		
280	Bet. Cons. 3 & 4, lot 12.....					.5	33								
281	Bet. Cons. 2 & 3, lots 5, 6 & 7....					1.5	26								
282	Bet. lots 10 & 11, Con. 1, and Cons. 1 & 2, lot 11.....							.63	22						
283	Bet. Cons. 5 & 6, lot 10 11 & 12					1	26								
BOUNDARY LINES.															
284	Beatty—Carr: Cons. 3 & 4.....							2	re						
285	Bet. Cons. 1 & 2.....														
286	Bet. Con. 4.....													.5	
287	Beatty—Hislop: Lots 8 to 13....														
288	Bond—Stock: Lot 3.....														
289	Bowman—Carr: Lots 5 to 12....							4	re						
290	Lots 1, 2 & 3.....														
291	Bowman—Currie: Cons. 4, 5 & 6.														
292	Bowman—Hislop: Cons. 2, 3 & 4.														
293	Carr—Taylor: Cons. 3 & 4.....							2	re						
294	Carr—Wilkie: Lots 5 to 10.....	3	66	3	66	3	26								
295	Clergue—Walker: Cons. 1 & 2....							2	re						
296	Currie—Taylor: Lots 2 to 6.....													2.25	
297	Currie—Taylor: Lots 2, 4, 10 & 12														
298	Lots 1 to 12.....							6	re						
299	Hislop—Playfair: Lots 1 & 2....					1	33								
300	Stock—Taylor: Cons. 2, 3 & 4....													1.1	
301	Cons. 1 to 6.....							6	re						
302	Taylor—Walker: Bet. lots 6, 7 & 8							1.5	22						

## NORTHERN DEVELOPMENT BRANCH.

DONE, YEAR 1921.

Crushed Rock		Drag- ging Miles	Other Rep'rs Miles	Culverts			Bridges		REMARKS
Yds. crush- ed	L cov- ered			Wood	Stone or Conc.	Met.	Size	No.	
								1 Repaired.	256
				5			18x4x2	1 16x16x5.	257
				5			16x2x2	2 200x16x10.	258
				6			18x3x2		259
				4			18x3x2		260
									261
				12			16x3x2		262
				10			18x3x2		263
									264
									265
									266
				1			18x4x4		267
				3			18x4x4	1 16x16x4.	268
				4			18x3x2		269
				5			18x4x4	1 20x16x6.	270
				4			18x4x4	1 16x16x6.	271
									272
									273
									274
									275
									276
									277
				12			18x3x2	2 16x16x6.	278
									279
									280
									281
				3			18x3x2		282
									283
									284
		2							285
									286
		3							287
				1			18x4x3		288
									289
		1.5							290
			.25					1 Repaired.	291
		1.5							292
									293
									294
									295
									296
				2			16x4x2		297
				4			18x6x4	1 16x6x6.	298
									299
									300
									301
				4			18x4x4		302



DEPARTMENT OF LANDS AND FORESTS.

ANNUAL REPORT OF WORK

MATHESON DISTRICT.

	TOWNSHIP—LOCATION	Cut- ting		Burn- ing		Stump- ing and Grub'g		Grading		Cross Lay		Ditching		Gravelling	
		L mfs.	W ft.	L mfs.	W ft.	L mfs.	W ft.	L mfs.	W ft.	L mfs.	W ft.	L ft.	W & D	L mfs.	yds. used
	LATCHFORD—COCHRANE TRUNK ROAD.														
303	Bowman: Cons. 5 & 6.....			Was	houts	filled	at	culver	ts	and	br	idge a	pproa	ches.	....
304	Carr: Cons. 1 & 2.....							2	re					1	....
305	Lot 10, Con. 2.....			Grade	s red	uc	ed on	a	pproac	hes to	Wa	htay	beag	Bridge	....
306	Hislop: Cons. 4 & 5.....			Was	houts	filled	at	culver	ts	and	br	idge a	pproa	ches.	....
307	Lots 6, Con. 1.....														
308	Lot 11, Con. 4.....														
309	Lot 13, Con. 5.....														
310	Con. 1.....							1	30						
311	Playfair: Cons. 5 & 6.....							2	30			800	3 x2		
312	Lot 4, Con. 4.....											450	5 x3½		
313	Taylor: Lot 1, Con. 3.....													5	
314	Cons. 3 & 4.....							2	re						
	MUSKOKA DISTRICT.														
315	Road from Severn Bridge to North Bay.....							8.5	18	1		500	2 x1½	229	
								.25	24			560	5 x4		
								1.5	22			500	4 x3		
								9.	20			330	3 x2		
								5.6	for	cr	us	hed	stone.		
316	Rd. from Utterson to Parry Sound.....							.25	16			1320	2 x1	15	
				Und	er brus	hing									
317	Rd. from Huntsville to Dwight ..	3						12	20						4.7
318	Gravenhurst Sanitorium Road...	.25	66	.25	66	.25	26	.33	26						17
319	Rd. from Gravenhurst to Bala...	4.5	24	4.5	24			2	18			1915	2 x1	91	
								3	20						
320	Bala-Parry Sound, Footes Bay to Gordons Bay.....			Brush	ing			.7	16	.01	16				
		.5	35			.25	40								

## NORTHERN DEVELOPMENT BRANCH.

DONE YEAR, 1921.

Crushed Rock		Drag- ging Miles	Other Rep'rs Miles	Culverts			Bridges		REMARKS	
Yds. crush- ed	L cov- ered			Wood	Stone or Conc.	Met.	Size	No.	Description	
										303
										304
										305
										306
								1	Repaired.	307
								1	Repaired.	308
								1	Repaired.	309
				8			18x4x4			310
										311
										312
										313
										314
		30				1 Steel	20'6"x18"		357 c.yd. rock fill.	315
						1 "	20'6"x14"		1147 c.yd. earth fill.	
						1 "	26'x36"		180 c.yd. excavation,	
12851½	5.6					2 "	20'x14"	1 10'	450 rods fencing erected.	
						1 "	46'x15"	2 14'x 16"		
						1 "	30'x16"			
						2 "	20'x16"			
						1 "	12'x18"			
						1 "	20'x12"			
						2 "	22'x 8"			
					1 Stone		13'x 20'x16			
					1 "		16'x 16'x14			
					2 "		18'x 22'x16			
					1 "		21'x 24'x24			
					1 "		26'x 30'x30			
					1		32'x 18'x18			
					1		22'x 48'x48			
					1		23'x 14'x14			
					1		20'x 24'x20			
					1		22'x 36'x31			
					1		20'x 12'x12			
					1		22'x 48'x6			
									1625 c.yds. earth excava- tion & fill in approaches to Skeleton River Br.	316
				6 repaired						317
				20	10 Steel		20'x10"			
							16'x 20'x12			
		1.25			1 Steel		18'x 24'		150 c.yd. earth filling.	318
					3 "		26'x 20'		100 rds. fencing erected.	319
					3 "		19'x 10'		836 c.yd. earth filling.	
					1 "		16'x 10'		122 c.yd. stone.	
					7 "		25'x 10'			
					1 "		18'x 10'			
					1 Stone		16'x 12'x8"			
				7			16'x 16'x8"			
				6			14'x6'x6"			320

## DEPARTMENT OF LANDS AND FORESTS,

## ANNUAL REPORT OF WORK

## NIPISSING-SUDBURY DISTRICT.

		Cut- ting		Burn- ing		Stump- ing and Grub'g		Grading		Cross Lay		Ditching		Gravelling	
		L mfs.	W ft.	L mfs.	W ft.	L mfs.	W ft.	L mfs.	W ft.	L mfs.	W ft.	L ft.	W & D	L mfs.	yds. used
	<i>Trunk Road from Pembroke to Sud- bury:</i>														
321	Pembroke to Petawawa .....													4 6	1609 719
322	Chalk River westwards.....	6.5		6.5		6.5		6.5				6107			
323	Stonecliff to Deux Rivières .....									Rep	ai	red.			
324	Deux Rivières to Klocks.....	5.5		5.5		5.5		5.5				600			
325	Klocks to Mattawa.....														
326	Callander to North Bay: (Callander Westwards).....											1600		4.5	74.
	(North Bay Eastwards).....													3.5	530
327	North Bay to Sturgeon Falls.....											400		10	20
								3.5	re			5200	cleare	d 2	142
								8	re					3.5	267
328	Sturgeon Falls to Verner.....														
329	Verner to Warren.....													5	310
330	Wahnapitae, Eastwards.....													4	9
331	Coniston to Sudbury.....														67
332	Minessing Road, Algonquin Park.....									270	16	7920	2 x 1½		
	<i>Trunk Road, North Bay North- wards:</i>														
333	I.—North Bay to Feronia.....														110
334	II.—Feronia to Widdifield.....					3.5	26	3.5	24						
335	Trunk Rd., Sturgeon Falls to Field .....							.5	re					.5	
						2.5		2.5						2.5	168
336	Sturgeon Falls—Field Road to Smoky Falls.....							2.75						2.25	159
337	Warren—St. Charles Road.....														6
338	St. Charles—Noelville Road.....							2.75				1000			
339	Hagar—St. Charles Road.....					3.5		3.5				1000			
340	Sudbury—Azilda—Chelmsford Rd.....							1.5	re					1.5	111
								.75	re					.75	53
														4	266
341	Sudbury—Long Lake Road.....							1.25	re						
342	Rutter—Noelville Road.....							7.5	re					7.5	530
343	Coniston—Garson Road.....													2.5	156
	<i>Trunk Road, Sudbury to Milnet:</i>														
344	I—Sudbury to Hanmer.....							1.5	re						1000
								2.	re						
345	II.—Hanmer to Capreol.....							2.5	re						
346	III.—Capreol to Milnet.....	1.5	66	1.5	66	3	26	3	24						
347	Road to West Shining Tree.....					5.5	16			.4	8			5.5	8' wide

## NORTHERN DEVELOPMENT BRANCH.

DONE, YEAR 1921.

Crushed Rock		Drag- ging Miles	Other Rep'rs Miles	Culverts			Bridges		REMARKS	
Yds. crush- ed	L cov- ered			Wood	Stone or Conc.	Met.	Size	No.	Description	
		6		cleaned	out				1 mile sidebrushing.	321
		14		cleaned	out				Washouts repaired.	322
		18		9	3	6			Boulders removed from	323
									waggon track, over- hanging trees and branches removed.	
		14		10		4				324
				2	repaired					325
		4.5		1				1	Repaired.	326
		9							2.5 miles sidebrushed.	327
									10 miles sidebrushed.	
								3	Re-covered.	
		11			1	1			Creek cleared out.	328
		8			cleaned	out		1	Repaired.	329
				4			14x2x2			330
				22			14x8		2330 c.yd. of surfacing material placed on road.	331
										332
		6		2	repaired					333
				24	2			2	25' span.	334
					repaired		(Old road)		1500 c.yd. hill cutting.	335
				4	3	3	(New road)		.5 mile sidebrushed.	
				8						336
in general	repairs			8	rebuilt					337
				10				1	20' span.	338
									350' fill, 3' deep.	339
										340
				6		2			Road widened at bad curve.	341
				5		16				342
										343
										344
									1 mile sidebrushed.	345
										346
				27						347



## DEPARTMENT OF LANDS AND FORESTS.

## ANNUAL REPORT OF WORK

## PARRY SOUND DISTRICT.

		Cut- ting		Burn- ing		Stump- ing and Grub'g		Grading		Cross Lay		Ditching		Gravelling	
		L mfs.	W ft.	L mfs.	W ft.	L mfs.	W ft.	L mfs.	W ft.	L mfs.	W ft.	L ft.	W & D	L mfs.	yds. used
348	Rd. from Severn Br. to North Bay.	.....	.....	.....	.....	.....	.....	14.91	18	.....	.....	300	3 x2	....1	2509½
								9.5	15	.....	.....	140	2 x1	.....	
								1	22	.....	.....	1146	3 x2½	.....	
								8	20	.....	.....	800	2 x1½	.....	
												300	1½x1	.....	
349	Powassan—Chisholm Road.....	.....	.....	.....	.....	.....	.....	4.5	22	.....	.....	.....	.....	.....	80
350	Powassan—Nipissing Road.....	.....	.....	.....	.....	.....	.....	8	18	.....	.....	100	2 x2	.....	289
351	Nipissing—Restoule Road.....	Brus	hing.	.....	.....	.....	.....	.....	.....	.....	.....	495	1½x1½	.....	1285
		2	.....	.....	.....	.....	.....	.....	.....	.....	.....	1014	3 x1	.....	
		.1	66	.1	66	.1	66	7.25	22	.....	.....	1849	2 x1½	.....	
352	Powassan—Restoule Road: (Christian Valley).....	1.5	66	1.5	66	1	26	1	24	.....	.....	188	2 x1½	.....	
												500	4 x1½	.....	
												225	2½x1	.....	
353	Trout Creek—Commanda Road..	6	66	6	66	4.5	26	2	24	.03	12	3924	clear	d....	2845
								2	22	.....	.....	150	5 x5	.....	
												660	2 x1	.....	
												6	272x1	.....	
												2250	1½x1½	.....	
												1000	2 x1½	.....	
354	Burks Falls—Maganatawan Road	4.5	66	4.5	66	5	26	4	25	.....	.....	8900	3 x2½	.....	1412
												9240	4 x2½	.....	
												2340	3 x1½	.....	
												4350	5 x1	.....	

## NORTHERN DEVELOPMENT BRANCH.

DONE, YEAR 1921.

Crushed Rock		Drag- ging Miles	Other Rep's Miles	Culverts				Bridges		REMARKS	
Yds. crush- ed	L cov- ered			Wood	Stone or Conc.	Met.	Size	N <sup>o</sup> .	Description		
		143.50		2			22x24x24			10560 ft. ditches cleared,	348
				1			18x48x24			stone walls 134'x4'x3'.	
				2			18x36x24			421 c.yd. stone fill.	
				3			16x36x24			860 c.yd. earth fill.	
				1			16x24x12			1624 c.yd. cinders on road	
				7			16x48x48				
				1			18x48x24				
				1			18x48x36				
				1			covered				
					1		20x36x24				
					1		16x24x24				
					1		16x72x24				
					1		14x24x24				
					1		16x24x24				
						4	26x30				
						1	24x30				
		2.50		2			18x48x24				349
		6								3 c.yd. stone fill.	350
		7.50		5			repaired	1	Repaired.	4 c.yd. stone fill.	351
					2		18x8x2				
					13		18x3x2			Stone wall, 196'x 8.	
					2		18x4x4			Stone wall, 528'x 4.	
					4		18x2x2				
				5			18x3x2				
				8			18x4x4				
				15			18x3x2				
		2.25		2			(subways)			$\frac{1}{4}$ mile filled 2 feet deep.	352
				2			22x4x2			Grade reduction, 300'x4'.	
				1			24x5x3			Stone wall, 300'x5x3.	
				3			26x3x3			250 c.yd. excavation,	
				2			13x2 $\frac{1}{2}$ x1			400 c.yd. embankment.	
		13			1		14'x 18"	1	Repaired.	2050 c. yd. filling.	353
					3		20'x 24"			52 c. yd. stone fill.	
					2		20'x 12"			6200 c. yd. excavation.	
					1		18'x 12"			Side hill cutting.	
							18x3x3			$\frac{1}{4}$ mile x 6'.	
				1			30x6x4				
				1			28x5x4				
				4			18x3x3				
				1			24x6x3				
				1			24x5x3				
				1			19x4x2 $\frac{1}{2}$				
				9			18x3x3				
				9			16x3x3				
				1			30x6x6				
				1			24x3x3				
					1		26x3x3				
					3		24x3x3				
		3.50		8			26x4x2			3494 c. yd. excavation.	354
				11			22x4x4			1876 c. yd. embankment.	
					1		24x4x4			204 c. yd. earth fill.	
										71 c. yd. stone fill.	
										.17 mile brushed out.	



## NORTHERN DEVELOPMENT BRANCH.

DONE, YEAR 1921.

Crushed Rock		Drag- ging Miles	Other Rep'rs Miles	Culverts			Bridges		REMARKS	
Yds. crush- ed	L cov- ered			Wood	Stone or Conc.	Met.	Size	No.		
				3			12x1½x1½			355
				4			16x10x6			
										356
										357
		4						5	Repaired.	358
										359
		1		8			18x5x2	1	229x18x5.	300 yds. surfaced with loam.
				1			13x10x3			361
800										362
										363
				2			18x5x2	1	18x16x4.	3196 c. yds. filling.
				1			18x15x4	1	18x10x4.	
				1			18x8x2	1	25x18x4.	
								1	20x18x4.	
										365
				9			16x6x2	1	102x16x4.	
								1	51x16x4.	
								1	25x16x4.	
								1	20x16x4.	
										367
										368
									¾ mile widened.	369
				1						370
										371
										372
				7						373
										374
				2						375
				5						376





## NORTHERN DEVELOPMENT BRANCH.

DONE, YEAR 1921.







## DEPARTMENT OF LANDS AND FORESTS,

## ANNUAL REPORT OF WORK

## THUNDER BAY DISTRICT.

TOWNSHIP—LOCATION		Cutting		Burning		Stump- ing and Grub'g		Grading		Cross Lay		Ditching		Gravelling	
		L mls.	W ft.	L mls.	W ft.	L mls.	W ft.	L mls.	W ft.	L mls.	W ft.	L ft.	W & D	L mls.	yds. used
HYMERS—SOUTH GILLIES ROAD.															
445	South Gillies: Hymers Hill.....													.15	
446	Cons. 2 & 3.....	1		si	debr	us	hed.	1.5	22			501			1350
SUNSHINE ROAD.															
447	Conmee: Bet. lots 4 & 5 Cons. 5 & 6.....	1.63	66	1.63	66	1.63	8								
448	Bet. Con. "A" & lot 1.....														
SOUTH GILLIES—PEARSON ROAD.															
449	Gillies: Bet. lots 6 & 7, Con. 1 & Pearson, across Cons. 3, 4, 5 & and lots 19 & 20.....	3		si	debr	us	hed.	5	22			2400			
450	Pearson: Bet. lots 22 & 23, Con. 2.....											2000			
ROAD FROM DONA BRIDGE TO FORBES TOWNSHIP.															
451	Dawson Road lots, Dona Bridge to lot 2.....	2	40	2	40	2	26	.5	22						
452	To South Boundary, Forbes Boundary line across lot 13.....														
	Forbes: Bet. lots 12 & 13, Con. 1.....	2.25	66	2.25	66	2.25	26								
SCOBLE ROAD.															
453	Blake—Scoble Boundary, Cons. 1, 2 & 3, Scoble, lots 1 to 2.....							8	22			900		3	1500
454	Gillies: Bet. Cons. 1 & 2, lots 1 to 6.....														
PEARSON—PARDEE ROADS.															
455	Pearson: Bet. lots 6 & 7, Cons. 1, 2 & 3.....	2.5	66	2.5	66	2.5	28					600 3 x 2½ 600 6 x 2			
456	Pearson: Bet. lots 11 & 12, Cons. 1, 2 & 3.....	1.5	16	1.5	16	1.5	28	1.75	22			1 450 3 x 2½			
ROAD ON BLIND LINE CONMEE.															
457	Conmee: Across lots 1 to 6, Con. 1, and bet. lots 6 & 7, Con. 1.....	3.5		si	debr	us	hed.	3.5						3.5	2594½
ARTHUR STREET ROAD.															
458	Paipoonge: Fort William to Kaka- beka.....			Road	w	ay	ma	in	tained	and	kept	in	ge	neral	repair. ...
PORT ARTHUR—NEPIGON ROAD.															
459	McGregor: Port Arthur eastwards.....	8		si	debr	us	hed.					11488 3½x2		8	5678
460	McKenzie River to Sibley.....	3.5		se	cond	g	rowth					21620			500 1940



## DEPARTMENT OF LANDS AND FORESTS.

## ANNUAL REPORT OF WORK

## THUNDER BAY DISTRICT.

	TOWNSHIP—LOCATION	Cut- ting		Burn- ing		Stump- ing and Grub'g		Grading		Cross Lay		Ditching		Gravelling	
		L mls.	W ft.	L mls.	W ft.	L mls.	W ft.	L mls.	W ft.	L mls.	W ft.	L ft.	W & D	L mls.	yds. used
461	Sibley eastwards. . . . .	4.5	40	4.5	40	4.5	28								
462	At McKenzie River. . . . .														
	DAWSON ROAD.														
463	McIntyre: Port Arthur to lot 27, Con. "A," Dawson Rd. lots. .	8	sid	ebru	shed.			8	24			3500		1	
464	Oliver & Ware: McIntyre Tp. to Kaministiquia. . . . .	5.5		do.								31680	3 x 1½	9	2445
	JOHN ST. ROAD.														
465	McIntyre & Oliver: Port Arthur— Kam River. . . . .	8		do.								31680	3 x 1½		
	OLIVER ROAD.														
466	McIntyre & Oliver: Port Arthur— Kakabeka. . . . .	8		do.								22720	3 x 1½		
	CURRENT RIVER ROAD														
467	McIntyre & Gorham: Along Cur- rent River to line bet. Cons. 3 & 4, Gorham. . . . .	1.25	40	1.25	40	1.25	26	1	22						
	DOG RIVER ROAD.														
468	Ware: Dawson Rd. to lot 20 Con. 6. . . . .							2.5	22					1	
	DOG LAKE ROAD														
469	Gorham & McIntyre: Dawson Rd. to Gorham Ware Boundary on line bet. Cons. 5 & 6. . . . .	3.5	sid	ebru	shed.							800			1265
	COPENHAGEN ROAD.														
470	McIntyre & McGregor — Gorham Boundary: Port Arthur to Con. 3, Gorham. . . . .	2.5		do.								1170		3	1196
	TOWNSHIP WORK.														
471	Dawson Road Lots: Extension of Dawson Road. . . . .														
472	Bet. Cons. 1 & 2, lots 12 to 15. .	2		do								5180			180
473	Dorion: Bet. lots 1 & 2, Con. 4. .							3				825			
474	Quimet to Coldwater River. . . .	1.25		do.								1650			
475	Bet. lots 2 & 3, Con. 4. . . . .							1				225		3	
476	Bet. Cons. 3 & 4, Ouimet to lot 9							5				600			
477	Brunner Road, Cons. 4 to 6. . . .	1		do.								1200		38	
478	Bet. lots 10 & 11, and across lots 10 & 11, to corner of lot 9. . . .	.7		do.				.25				3960		1.5	
												750		.25	

## NORTHERN DEVELOPMENT BRANCH.

DONE, YEAR 1921.

Crushed Rock		Drag- ging Miles	Other Rep'rs Miles	Culverts				Bridges		REMARKS	
Yds. crush- ed	L cov- ered			Wood	Stone or Conc.	Met.	Size	No.	Description		
			.25					1	Abutments completed and steel erected.	2000 c. yd. earth fill.	461 462
			6								463
			10					1	Re-covered.		464
			2 new 6 repaired								465
		21.50									466
			3.06								467
			1.5	16							468
		6		7							469
				3				1 16x11x4. 1 16x16x4.		2 creeks cleared out.	470
			8	repairing				1 Repaired.		1 hill graded and ditched.	471 472 473
				3							474
				7							475
				7							476 477
								1 Renewed.			478



## DEPARTMENT OF LANDS AND FORESTS,

## ANNUAL REPORT OF WORK

## THUNDER BAY DISTRICT.

TOWNSHIP—LOCATION	Cut- ting		Burn- ing		Stump- ing and Grub'g		Grading		Cross Lay		Ditching		Gravelling	
	L mfs.	W ft.	L mfs.	W ft.	L mfs.	W ft.	L mfs.	W ft.	L mfs.	W ft.	L ft.	W & D	L mfs.	yds used
479 Bet. Cons. 4 & 5, lots 11 & 12..								.008					.008	
480 Bet. Cons. 3 & 4, lots 13 & 14..	.13		.13		.13		.13							
481 Bet. lots 12 & 13, Con. 4, and bet. Cons. 3 & 4, lots 9 to 12..	.2	side	side	side	side	side		.007					.3	
482 Bet. lots 8 & 9, Con. 3.....													.3	
483 Bet. Cons. 2 & 3, lots 9 to 13..	2	side	side	side	side	side		.1					.2	
484 Gorham: Bet. Cons. 3 & 4, lots 9 & 10.....	1	40	1	40	1	22	1	16			575			
485 Bet. lots 8 & 9, Cons. 1, 2 & 3..	2	side	side	side	side	side								
	.75	40	.75	40	.75	24							2.25	38
486 Gorham & Ware Boundary, Cons. 1 & 2.....	.25	40	.25	40	.25	24					700		2.75	52
487 Lybster: Bet. Cons. 1 & 2, lots 1 & 2.....	1	40	1	40	1	24	1	16						
488 Marks: Bet. Cons. 1 & 2 lots 3 & 8	.2	5	side	side	side	side								
	1	22	1	22	1	22	1	16			1000			
489 Bet. lots 6 & 7, Con. 2.....	side	side	side	side	side	side								
490 Bet. Cons. 2 & 3, lots 3 & 4....			do.					do.			do.			
491 Bet. lots 2 & 3, Con. 2.....			do.					do.			do.			
492 Bet. Cons. 5 & 6, lot 2.....			do.					do.			do.			
493 Bet. Cons. 6 & 7, lot 1.....			do.					do.			do.			
494 Marks & O'Connor Boundary, Cons. 6 & 7.....			do.					do.			do.			
495 Pearson: Bet. Cons. 3 & 4, lots 7 to 11.....	.5	66	.5	66	.5	26	.2	re			310			
							.5	20			150			
496 Bet. Cons. 4 & 5, lots 1 & 2....											150			
497 Bet. lots 9 & 10, Cons. 1 & 2....	.25	40	.25	40			.75	16						
498 Bet. Cons. 4 & 5, lots 12 & 13, and bet. lots 12 & 13, Con. 5..														
499 Bet. Cons. 2 & 3, lots 9 & 10...											130			
500 Schreiber: Schreiber to L. Superior							.25	16			2000		1.12	11
501 Scoble: Bet. lots 2 & 3, Con. 1..							.5	20						
502 Bet. lots 4 & 5, Cons. 2 & 3....	.75	60	.75	60	.75	26	.5	16	.25	12				
503 Scoble & Gillies: Cons. 3 & 4..											600		2	.9
504 Scoble & Paipoonge: Lots 3 & 4..	.08	side	side	side	side	side	.25	16					1.25	
505 Sterling & Lyon: Lots 4 & 5....									.38	12	1980		.38	
506 Sterling: Bet. Cons. 2 & 3, and bet. lots 2 & 3, Con. 2.....											1508			
507 Strange: Silver Mt. to Whitefish.														
508 Whitefish to West Boundary...					1.5	20	.25	16						
509 Ware: Bet. Cons. 3 & 4, lots 1 to 4.	1.75	40	1.75	40	1.75	40								
510 Bet. lots 17 & 18, Cons. 2 & 3, and bet. Cons. 3 & 4, lots 13 to 18 .....														
511 Bet. lots 10 & 11, Cons. 1 & 2..	3	side	side	side	side	side								7

NORTHERN DEVELOPMENT BRANCH.

DONE, YEAR 1921.

Crushed Rock		Drag- ging Miles	Other Rep'rs Miles	Culverts			Bridges		REMARKS	
ds. ush- ed	L cov- ered			Wood	Stone or Conc.	Met.	Size	No.	Description	
								1	Re-covered.	479
										480
										481
										482
				5						483
				1						484
					repaire d					485
				15						486
										487
										488
										489
										490
										491
			8							492
										493
										494
			2	4						495
			1.25	7						496
			1	1						497
				3						
				1	replac ed			2	Re-covered.	1 hill cut down and rocks removed from roadway
				1						499
				1	remov ed					
				4	renew ed			1	Repaired.	500
										501
				6						502
				6				2	Raised.	503
										504
										505
				7						
			5	12	replac ed					506
			2	9	replac ed					507
										508
										509
			6	25				1	16x16x5.	500 c. yd. rocks removed from road.
			3	19				1	Recovered.	511

*Appendix No. 46.*

## NEW LISKEARD DEMONSTRATION FARM.

Work on the Farm during the past year consisted of the production of 120 acres of crop, and in the clearing of approximately 18 acres of new land. On account of not having any farm buildings, it was not considered advisable to carry on any field demonstration work, in the production of a variety of crops. The Farm produced 60 acres of hay, and 60 acres of oats.

Practically all ploughing was done in the fall of 1920, with the exception of 10 or 12 acres of new land; this was ploughed in the spring. Considering the rather adverse growing season, the crops turned out very well.

The seeding of oats was commenced on the 18th of May, and concluded on the 25th. We grew two varieties of oats, viz., O.A.C. No. 72, and O.A.C. No. 3. The O.A.C. No. 3 gave the best results, matured earlier, filled better, and weigh heavier. The No. 3 matured in 75 days from date of seeding. The weight of a cleaned sample of this variety averages 37 pounds to the measured bushel; this is considered to be exceptionally good for the past year. On account of having such a large crop, and owing to the necessity of having to stack same, I deemed it advisable to sell 30 acres, standing in the field; this left 30 acres to be taken off by the farm.

We commenced cutting hay on the 10th of July, and before we had it finished, we commenced cutting our O.A.C. No. 3 oats. The hay gave an exceptionally good yield, especially the first cut of new hay, which was approximately all clover. The entire 60 acres would average a ton and a half per acre.

The oats did not yield quite as well as last year, on account of drought, the total yield being about 1,800 or 2,000 bushels.

About 40 acres of land have been ploughed this fall, for next year's crop. This leaves us with between 90 and 100 acres of hay crop for next year.

I would urgently recommend that farm buildings be erected next year, and that the farm be properly equipped with a small herd of good cattle, and a few hogs.

I am firmly convinced that the farm can be made to fill a very important need in this part of the district. Every year the Government distributes more or less seed grain through this part of Northern Ontario, and it only seems reasonable that the major part of this supply might be grown on the New Liskeard Farm.

It is impossible, however, to carry on work of this kind successfully without farm buildings.

## SHORT COURSE AND SEED FAIR.

As in past years, the farm has co-operated with the Department of Agriculture in providing accommodation in the judging pavilion for holding a Short Course and Seed Fair.

Our Short Course and Seed Fair was conducted last year in co-operation with the International Harvester Company; Messrs. O'Grady Bros., of New Liskeard, are agents for this firm. The course lasted four days, and we had an attendance of from 100 to 150 each day. Following is a list in connection with the short course and Seed Fair:

## CLASS 1—OATS.

*Section 1—1 bus. O.A.C., No. 3 Oats—*

1st, \$3.50; 2nd, \$2.50; 3rd, \$1.50; 4th, 50c.

*Section 2—1 bus., O.A.C., No. 72—*

1st, \$3.50; 2nd, \$2.50; 3rd, \$1.50; 4th, 50c.

*Section 3—1 bus., Banner Oats—*

1st, \$3.50; 2nd, \$2.50; 3rd, \$1.50; 4th, 50c.

*Section 4—1 bus., Any other variety (White)—*

1st, \$3.50; 2nd, \$2.50; 3rd, \$1.50; 4th, 50c.

## CLASS 2—WHEAT.

*Section 1—1 bus., Marquis Spring Wheat—*

1st, \$5.00; 2nd, \$4.00; 3rd, \$3.00; 4th, \$2.00; 5th, \$1.00; 6th, 50c.

## CLASS 3—BARLEY.

*Section 1—1 bus. Any six-rowed Variety.—*

1st, \$3.50; 2nd, \$2.50; 3rd, \$1.50; 4th, 50c.

## CLASS 4—PEAS.

*Section 1—1 bus., Large Field Pea—*

1st, \$3.50; 2nd, \$2.50; 3rd, \$1.50; 4th, 50c.

*Section 2—1 bus., Small Field Pea—*

1st, \$3.50; 2nd, \$2.50; 3rd, \$1.50; 4th, 50c.

## CLASS 5—GRASSES.

*Section 1— $\frac{1}{2}$  bus., Red Clover Seed—*

1st, \$3.50; 2nd, \$2.50; 3rd, \$1.50; 4th, 50c.

*Section 2— $\frac{1}{2}$  bus., Alsike Seed—*

1st, \$3.50; 2nd, \$2.50; 3rd, \$1.50; 4th, 50c.

*Section 3— $\frac{1}{2}$  bus., Timothy Seed—*

1st, \$3.50; 2nd, \$2.50; 3rd, \$1.50; 4th, 50c.

## CLASS 6—FLAX.

*Section 1— $\frac{1}{2}$  bus., Flax Seed—*

1st, \$3.50; 2nd, \$2.50; 3rd, \$1.50; 4th, 50c.

## CLASS 7—POTATOES.

*Section 1—1 bus., Irish Cobbler Type—*

1st, \$4.00; 2nd, \$3.00; 3rd, \$2.00; 4th, \$1.00; 5th, 50c.

*Section 1—1 bus., Green Mountain Type. —*

1st, \$4.00; 2nd, \$3.00; 3rd, \$2.00; 4th, \$1.00; 5th, 50c.

## PROGRAMME FOR AGRICULTURE SHORT COURSE AND SEED FAIR.

*March 29th—1.15 p.m. to 3.00 p.m.*

H. G. Bell, B.S.A., Toronto, Ont.

*Subject—Soils, Fertilizers and Soil Cultivation.**March 30th.—3.00 p.m. to 4.30 p.m.*

J. W. Clarke, Cainsville Ont.

*Subject—Production of Registered Seed.**March 31st—1.15 p.m. to 3.00 p.m.*

Jno. Gardhouse, Weston, Ont.

*Subject—Dairy and Dual Purpose Cattle.*



*April 1st*—1 30 p.m. to 3.00 p.m.

W. H. J. Tisdale, B.S.A., Toronto, Ont.

*Subject*—Co-operative Grading and Marketing of Wool.

3.00 p.m. to 4.30 p.m.

Geo. H. Barr, Chief of Dairy Division, Ottawa, Can.

*Subject*—Dairying and Creamery Work, Annual Creamery Meeting.

#### EVENING LECTURES.

*March 31st*—7.45 p.m.

J. W. Clarke, Cainsville, Ont.

*Subject*—Lecture, Vegetable Growing—(Moving Pictures).

*April 1st*—7.45 p.m.

J. W. Clarke, Cainsville, Ont.

*Subject*—Lecture and Demonstration on Poultry—(Moving Pictures).

*List of Prize Winners, as follows:*

#### CLASS 1—OATS.

*Oats—O.A.C., No. 3—*

1st, Chas. H. Thomas, Uno Park, Ontario.

2nd, J. R. Philp, R. R. 1, New Liskeard, Ontario.

3rd, Jno. Winnesheimer, R. R. 1, Thornloe, Ontario.

*Oats—O.A.C., No. 72—*

1st, Geo. C. Foster, Uno Park, Ontario.

2nd, W. R. Peters.

3rd, W. Hermiston, Uno Park, Ontario.

4th, W. A. Reid, Earlton, Ontario.

*Oats—Banner—*

1st,

2nd, Jas. Carter.

*Oats—Any other Variety—*

1st, Chas. Thomas, Uno Park, Ontario.

2nd, Bruce Irvine, Hanbury, Ontario.

*Oats—Any other Variety—*

1st,

2nd,

3rd, W. Hermiston, Uno Park, Ontario.

*Sweepstakes in Oats*—Chas. Thomas, Uno Park, Ontario.

#### CLASS 2—WHEAT

*Wheat, Marquis Spring—*

1st, W. A. Reid, New Liskeard, Ontario.

2nd, J. R. Philp, R. R. 1, New Liskeard, Ontario.

3rd, J. M. Gray, New Liskeard, Ontario.

4th, Jas. Carter, New Liskeard, Ontario.

5th, R. Parker, New Liskeard, Ontario.

6th, Chas. Thomas, Uno Park, Ontario.

*Sweepstakes in Wheat*—W. A. Reid.

#### CLASS 3—BARLEY.

*Any six-rowed Variety—*

1st, Geo. C. Foster, Uno Park, Ontario.

2nd, W. A. Reid, Earlton, Ontario.

3rd, R. Parker, New Liskeard, Ontario.

4th, R. H. Nickle, Hanbury, Ontario.

## CLASS 4—PEAS.

*Peas, Large Field—*

- 1st, Chas. H. Thomas, Uno Park, Ontario.
- 2nd, J. R. Philp, R. R. 1, New Liskeard, Ontario.
- 3rd, T. H. Nickle, Hanbury, Ontario.
- 4th, W. A. Reid, New Liskeard, Ontario.

*Peas, Small Field—*

- 1st, Chas. Thomas, Uno Park, Ontario.
- 2nd, J. M. Gray, New Liskeard, Ontario.
- 3rd, Jas. Carter, New Liskeard, Ontario.
- 4th, Albert Brooks.

*Sweepstakes in Peas—*Chas. Thomas, Uno Park, Ontario.

## CLASS 5—GRASSES.

*Seed, Red Clover—*

No entries.

*Seed, Alsike—*

- 1st, J. R. Philp, R. R. 1, New Liskeard, Ontario.
- 2nd, Jno. Winnesheimer, R. R. 1, Thornloe, Ontario.
- 3rd, W. A. Field, Earlton, Ontario.
- 4th, J. M. Gray, New Liskeard, Ontario.

*Sweepstakes in Alsike Seed—*J. R. Philp, New Liskeard, Ontario.*Seed, Timothy—*

- 1st,
- 2nd,
- 3rd, Jas. Carter, New Liskeard, Ontario.

## CLASS 6—FLAX.

*Flax Seed—*

- 1st, Chas. Thomas, Uno Park, Ontario.
- 2nd, J. R. Philp, R. R. 1, New Liskeard, Ontario.
- 3rd, Geo. C. Foster, Uno Park, Ontario.
- 4th, J. M. Gray, New Liskeard, Ontario.

## CLASS 7—POTATOES.

*Potatoes, Irish Cobbler Type—*

- 1st, Chas. Thomas, Uno Park, Ontario.
- 2nd, T. H. Nickle, Hanbury, Ontario.

*Potatoes, Green Mountain Type—*

- 1st, Geo. Walsh, New Liskeard, Ontario.
- 2nd, W. A. Reid, Earlton, Ontario.
- 3rd, Jno. Sharp, New Liskeard, Ontario.
- 4th, J. M. Gray, New Liskeard, Ontario.

AMOUNT OF PRIZE MONEY PAID OUT..... \$90.50

In conclusion, I wish to state that the Farm has had a quite successful year, and has produced a very creditable crop, in view of the rather indifferent growing season. One point I overlooked in speaking of our farm crops, was our second growth crop of clover. We cut 30 acres of second crop, which averaged about a ton per acre. It was one of the best second growth crops of hay that I have ever seen.

All of which is respectfully submitted.

W. G. NIXON,

*Agricultural Representative.*

## ONTARIO GOVERNMENT CREAMERY.

NEW LISKEARD, ONT., November 10th, 1921.

HONOURABLE BENIAH BOWMAN,

*Minister of Lands and Forests,**Parliament Buildings, Toronto, Ontario.*

DEAR SIR,—I beg to enclose report of Creamery operations for the year ending October 31st, 1921. While the amount of business done in the winter months was somewhat disappointing, nevertheless we had a nice increase in the amount of cream received during the latter six months. We took in a great deal more than a year ago.

There was one noted difference in the past year after the first of May, and that was the drop in the price of butter in one week of twenty cents per pound. The difference between the lowest prices of fat last year and this year was twenty-two cents per pound. The lowest last year was fifty-five cents, and this year thirty-three. We had two hundred and thirty-six patrons the past year, ranging in herds of cows from two to twenty. There have been a few silos gone up the past summer, and prospects are for some more again this coming year. There were some very good crops of corn and sunflowers grown this year, and the second clover was exceptionally good, which kept the cows in a good thrifty condition, and will no doubt help materially in giving extra milk for the coming winter. During the past year, we received 297,567 pounds of cream, and manufactured therefrom 96,981 pounds of butter, for which we received \$38,535.82 and paid patrons \$32,716.96, at an average price for butter fat for the year of 42.3 cents per pound.

I enclose a summary report of cream received, butter manufactured, money received and paid out since commencing operations in August, 1917.

Lbs. Cream.....	1,135,743
Lbs. Butter.....	364 878
Value Butter.....	\$179,794.67
Paid Farmers.....	\$159,179.48

All of which I humbly submit.

A. MACLACHLAN,  
*Manager.*

## SEED GRAIN, SECTION 2 (1).

The practice of providing seed grain for settlers in North and North-western Ontario was continued in the spring of 1921. Acting in co-operation with the District Agricultural Representatives, distributing stations were established in the Districts of Rainy River (Emo), Thunder Bay (Port Arthur), Temiskaming (New Liskeard and Matheson), Sudbury (Sudbury), Kenora (Dryden), Manitoulin Island (Gore Bay), Muskoka, Parry Sound and Nipissing (Huntsville). The following quantities of seed were distributed: Oats, 4,568 bushels; wheat, 378 bushels; barley, 428 bushels; clover, 5,870 pounds; alsike, 1,870

pounds; timothy, 8,831 pounds. This seed was supplied, in accordance with the provisions of the Northern and North-western Ontario Development Act 1915, to registered locatees or patentees. Those who did not pay cash at the time of purchase executed a promissory note for the amount of the purchase, with interest at 6 per cent., payable on 1st December, 1921, the note being registered as a first charge against the property. The seed was purchased locally wherever the local Agricultural Representative could obtain the requisite quantity, of good quality and at an approved price.

#### CATTLE PURCHASE, SECTION 2 (2).

The settlers in the northern part of the District of Temiskaming, in the neighbourhood of the Provincial Demonstration Farm at Monteith, expressed to the Superintendent there a desire to purchase a good class of cow, and asked the assistance of the Government in obtaining cattle of the best type. The Northern Development Branch purchased through the Farm Superintendent one car load of cows, containing 18 head, obtained in the Powassan section, and these were shipped to Monteith. The farmers in the district readily availed themselves of the opportunity of procuring cows of good quality, and the whole consignment was sold for cash at prices varying from \$30 to \$60, the total receipts being sufficient to cover the cost of the transaction. The cattle have proved eminently satisfactory.

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#### SECTION 1 (D).

#### THE ASSISTANCE OF SETTLERS.

##### *Re Feed Shortage.*

The attention of the Department of Agriculture was drawn during the summer of 1921, by the Representative at Gore Bay, to the devastation caused upon Manitoulin Island by the unusual conditions of drought which had prevailed throughout the spring and growing season. As a result, the fodder and grain crops, which have been a source of pride to the farmers of the island in previous years, were extremely small. The condition was intensified through a plague of grasshoppers, which completed the destruction of whatever growth had survived the absence of moisture. The local farmers are noted as large producers of cattle, sheep and hogs, and fears were entertained that unless Government assistance was forthcoming, not only would there be no surplus of feed for wintering the stock, but that the available fodder would not be sufficient to meet their needs during the fall of 1921.

It was decided to assist the agricultural industry on the island by supplying a quantity of hay, oats and corn to the farmers, to be paid for either in cash: or by promissory note, executed by the purchaser and a guarantor. Arrangements were made for this distribution to be done through the Northern Development Branch under Section 1 (D) of the Northern and North-western Ontario Development Act, 1912, and amendments.



The quantities estimated to be required were: about 1,500 tons of hay, 27,000 bushels of oats, and 10,000 bushels of corn. The prices which farmers were willing to pay were not to exceed \$30 per ton for the hay, 75 cents per bushel for the oats, and \$40 per ton for corn. The hay was purchased in the Bar River District, delivered by rail to Little Current; at Sault Ste. Marie, delivered by scow to Gore Bay; at Lion's Head, delivered by boat to Providence Bay; at Owen Sound, delivered by barge to Kagawong, and West Bay; and from various points in the counties of Grey, Bruce and Huron, delivered to Owen Sound, and thence transhipped in part by the Dominion Transportation Company boats to Little Current, Gore Bay and Meldrum Bay; and as to the larger proportion, special arrangements were made for collection and storage on the dock at Owen Sound, and trans-shipment by tug and barges to various docks on the island. The corn and oats were purchased at the elevators at Tiffin and Midland; and this grain was shipped by the specially chartered tug and barges used to transport the hay from Owen Sound.

Considerable difficulties were experienced in the transporting of the feed to the Island. The necessity for importing such large quantities of fodder was unprecedented, and the ordinary means of transportation were inadequate; farmers from whom the hay was purchased were not anxious to dispose of their stocks, owing to the general failure of crops throughout Ontario, and higher prices were anticipated; bad weather during the shipping period interfered with the arrangements made, and postponed delivery until the passage of heavily laden barges across the Georgian Bay became hazardous and slow. The whole of the shipping operations were, however, successfully concluded by the second week in November. Agents were appointed at the various receiving docks, and the feed was immediately available for distribution to the farmers.

The total quantities purchased were 1470 tons hay; 27,000 bushels No. 2 C.W. inspected Oats; 13,571 bushels No. 2 Yellow inspected corn.

The prices charged to the farmers were: Hay, \$29.00 per ton; corn, \$1.77 per bushel, or \$36.00 per ton; oats, 74 cents per bushel.

A feed shortage also became evident in the Mattawa District, towards the end of the summer, and four carloads of hay, containing 43 tons, have been shipped there, to partially meet the needs of the farmers in that locality. This hay is being sold at the rate of \$27.00 per ton, under the same conditions as feed was supplied to Manitoulin Island.

The feed thus supplied to farmers in affected areas, has been of the greatest benefit in enabling them to avoid disposing of their stock at greatly reduced prices, and it is hoped that, with an average production in the season to come, they will be re-established upon a normal basis.

## SUMMARY OF EXPENDITURE.

FOR THE TEN YEARS ENDING 31ST OCTOBER, 1921.  
Northern and North-western Ontario Development Fund.

SECTION.	Summary of Expenditure 23rd May, 1912, to 31st Oct., 1920.	Expenditure for year ending 31st October, 1921.	Total Expenditure to 31st October, 1921.
Section 1 (a) Works and Improvements.....	\$ 2,100.00	.....	\$ 2,100.00
Section 1 (b) Roads.....	6,963,451.00	\$1,406,125.78	8,369,576.78
Section 1 (d) Farms.....	74,757.67	5,210.70	79,968.37
Section 1 (d) Assistance of Settlers.....	.....	60,056.87	60,056.87
Section 1 (e) Creamery and Grain Elevators....	38,374.54	7,470.13	45,844.67
Section 2 (1) Seed Grain.....	177,972.12	12,640.51	190,612.63
Section 2 (2) Cattle Purchase Account.....	19,126.06	968.55	20,094.61
Section 2 (6) Fire Protection.....	3,773.45	.....	3,773.45
Returned Soldiers' and Sailors' Settlement Act, 1917.....	1,173,638.51	4,274.65	1,177,913.16
Settlers' Loan Acct., Clause 9 (Amend. Act 1916).	\$8,453,193.35 549,401.63	\$1,496,747.19 115,775.18	\$9,949,940.54 665,176.81
	\$9,002,594.98	\$1,612,522.37	\$10,615,117.35

## STATEMENT OF EXPENDITURE.

UNDER NORTHERN AND NORTH-WESTERN ONTARIO DEVELOPMENT ACTS, 1912 AND 1915.  
FOR THE YEAR ENDING 31ST OCTOBER, 1921.

Districts and Sections.	Expenditure, year ending 31st Oct., 1921.
1. Kenora.....	\$ 55,381.42
2. Dryden.....	67,086.55
3. Port Arthur.....	60,019.59
4. Fort William.....	72,334.65
5. Rainy River.....	126,724.95
6. St. Joseph Island.....	8,363.78
7. Sault Ste. Marie.....	136,520.84
8. Sudbury.....	70,967.72
9. Nipissing.....	68,996.76
10. Parry Sound.....	72,159.13
11. Muskoka.....	76,476.25
12. Renfrew.....	18,421.12
13. Simcoe.....	722.51
14. Algonquin Park.....	6,867.89
15. Manitoulin Island.....	62,280.93
16. Sundry Surveys (Muskoka, Parry Sound and Nipissing).....	6,170.74
17. Temiskaming.....	475,064.86
18. General Administration.....	21,566.09
	<hr/> \$1,406,125.78
19. Farms.....	5,210.70
20. Assistance of Settlers.....	60,056.87
21. Creamery.....	7,470.13
22. Seed Grain.....	12,640.51
23. Cattle Purchase.....	968.55
24. Returned Soldiers' and Sailors' Settlement Act:	
General Account.....	\$3,923.35
Adjustment Account.....	351.30
	<hr/> 4,274.65
25. Settlers' Loan Account.....	115,775.18
TOTAL.....	<hr/> \$1,612,522.37

November 15, 1921.

ARTHUR E. D. BRUCE,  
*Secretary and Accountant.*

## STATEMENT OF EXPENDITURE, YEAR ENDING 31ST OCTOBER, 1921.

*Making of Roads, Section 1 (b):*

Bruce, A. E. D., Secretary and Accountant, salary...	\$3,450.00	
Sinton, Jas., Road Engineer, salary.....	2,400.00	
Beardall, F. G., Principal Clerk, salary.....	2,100.00	
Laver, W. L., Senior Account Clerk, salary.....	1,900.00	
Reid, A., Map Draughtsman, salary.....	1,700.00	
Dicker, C. L., Clerk, salary.....	1,400.00	
Fleming, Miss E., Junior Clerk, salary.....	1,100.00	
Carefoot, Miss O., Clerk-Stenographer, salary.....	1,050.00	
		15,100.00
Wages.....	\$793,774.80	
Contracts.....	253,675.68	
Supplies and Equipment.....	343,575.30	
		1,391,025.78
		\$1,406,125.78

*Advancement of Settlement and Colonization, Section 1 (d):*

Wages.....	\$4,275.08	
Supplies, Stock and Equipment.....	935.62	
		5,210.70

*Assistance of Settlers, Section 1 (d):*

Hay, Oats, Corn, Freight and Disbursements.....	60,056.87
---	-----------

*Creamery, New Liskeard, Section 1 (e):*

Wages.....	\$3,790.17	
Supplies, Equipment, Freight and Expenses.....	3,679.96	
		7,470.13

*Seed Grain, Section 2 (1):*

Wages.....	41.25	
Seed, Freight and Disbursements.....	12,599.26	
		12,640.51

*Cattle Purchase Account, Section 2 (2):*

Cost of Cattle, Freight and Disbursements.....	968.55
--	--------

*Returned Soldiers' and Sailors' Land Settlement Act., 1917:*

Wages.....	\$2,786.15	
Supplies and Disbursements.....	1 137.20	
	3,923.35	
Adjustment Account.....	351.30	
		4,274.65
		\$1,496,747.19

*Settler's Loan Account, Amending Act, 1916:*

Dane, F., Commissioner, salary.....	\$5,000.00	
Kennedy, W. K. P., Accountant, salary.....	2,500.00	
Crawford G., Stenographer, salary.....	975.00	
		\$8,475.00
Net amount of loans issued.....	\$105,859.00	
Expenses.....	1,441.18	
		107,300.18
		115,775.18
		\$1,612,522.37

ARTHUR E. D. BRUCE,  
Secretary and Accountant.

November 15, 1921.

## NORTHERN DEVELOPMENT BRANCH.

## STATEMENT OF REVENUE FOR THE YEAR ENDED 31ST OCTOBER, 1921.

<i>Section 1 (b) Roads:</i>	
Sale of supplies, stock and equipment, rentals and refunds.....	\$ 2,016.86
<i>Section 1 (d) Farms:</i>	
Sale of produce.....	2,417.25
<i>Section 1 (d) Assistance of Settlers:</i>	
Cash sales of feed.....	6,480.82
<i>Section 1 (e) Creamery:</i>	
Butter revenue, sale of buttermilk and cans.....	6,247.56
<i>Section 2 (1) Seed Grain:</i>	
Notes retired and cash sales.....	21,796.09
<i>Section 2 (2) Purchase of Cattle Account:</i>	
Notes retired and cash sales.....	5,943.20
<i>Clause 5 (1-12) Soldiers' Settlement Account:</i>	
Sale of buildings, equipment, stock and material, rentals Kapuskasing and Shackleton Colonies.....	8,590.91
	<hr/>
	\$53,492.69
<i>Settlers' Loan Account:</i>	
Payments on Principal, Interest, etc.....	85,832.63
	<hr/>
Total Revenue under all heads, 1921 account.....	\$139,325.32

## RECORD OF CORRESPONDENCE.

## FOR YEAR ENDED 31ST OCTOBER, 1921.

Letters received.....	8,753
Letters mailed.....	10,712
Circulars mailed.....	652
	<hr/>
	11,364

ARTHUR E. D. BRUCE,  
Secretary and Accountant.

November 15, 1921.



*Appendix No. 47.*

46 RICHMOND ST. WEST,  
TORONTO, January 14, 1922.

*To the Honourable, the Minister of Lands and Forests, Ontario.*

SIR,—I have the honour to submit a report of the business of this department to the end of October, 1921, as follows:

Total number of applications received for loans, 2,931, applying for \$1,162,864, an average of \$396.75 per application, each case being considered on its own merits, and loans advanced on the basis of improvements to land.

The total number of loans granted to settlers was 1,903, amounting to \$626,995.00, an average of \$329.48. This includes an advance to the Sudbury Co-Operative Creamery Co., Limited, \$12,000.00, and a loan of \$10,000.00 to Kenora Dairy Co-Operative Association.

The repayments on account of loans has continued to be very satisfactory, 90 per cent. of the payments on account of interest having been made, and 96 per cent, of amount due on account of principal. Some loans have been paid in advance. It is just a question if this good showing will continue, as a number of conditions are not just so favourable as in the past years, but there is a sincere effort on the part of the settlers to live up to the terms on which the loans were advanced.

Recently there have been a large number of applications received—no doubt, due to the fact that settlers are forced to devote more time on their own lots. Lack of other employment that formerly engaged their attention, and that furnished quicker cash returns, is the reason.

Beg to direct your attention to the attached memorandum, giving details of operations carried on, and it's a pleasure to be able to report that settlers continue to express their appreciation for the loans received through this department, acknowledging the help it has been to them in many ways, particularly by enabling them to clear up land.

(Sgd.) F. DANE,

*Settlers' Loan Commissioner.*

*Memorandum of Settlers' Loans to October 31st, 1921.*

*Applications.*

Total number of applications received.....	2,931
Total amount applied for.....	\$1,162,864.00
Average per application.....	\$396.75
Amount applied for under approved applications.....	\$785,730.00

*Loans.*

Number of loans issued.....	1,903
Equal to 65% of applications.....	
Amount granted.....	\$626,995.00
Equal to 54 % of total amount applied for and	
Equal to 80% of total amount applied for under approved applications.	
Average loan.....	\$329.48
Total acreage covered by liens.....	292,732
Acreage improved land.....	40,045
Equal to 13.7% of total acreage.	
Average loan per acre on total acreage.....	\$2.14
Average loan per acre on acreage improved land.....	\$15.66

Note.—Figures, except averages include application for, and loan of \$12,000.00 to Sudbury Co-operative Creamery Co., Ltd., and \$10,000.00 to Kenora Dairy Co-operative Association.

*Repayments.*

Accrued interest due.....	\$ 95,079.46
Accrued interest received.....	86,338.37 or 90.80%
Payment on principal due.....	198,356.17
Payments on principal received.....	191,235.84 or 96.41%
Total payments due.....	293,435.63
Total payments received.....	277,574.21 or 94.59%

*Details of Loans Issued and Outstanding.*

District.	No. of Loans.	Amount.	Unpaid Principal and Accrued Interest.
Algoma.....	38	\$ 12,105.00	\$ 10,262.08
Kenora.....	198	72,645.00	59,472.80
Nipissing.....	83	30,300.00	22,874.36
Rainy River.....	155	49,700.00	32,888.99
Sudbury.....	71	37,800.00	31,525.23
Temiskaming.....	816	249,240.00	159,695.02
Thunder Bay.....	542	175,205.00	127,781.77
Totals.....	1,903	\$626,995.00	\$444,500.25

*Appendix No. 48.*

## REPORT OF FORESTRY BRANCH, 1921.

SIR,—The report of the work of this Branch for the year ending 31st October, 1921, is given under the sections of Forest Protection, Forest Investigation, Reforestation, and Forest Pathology.

## I. FOREST PROTECTION.

(1) *Legislation.*

No changes have been made in the Forest Fires Prevention Act since 1918. The experiences of the past two seasons have indicated, however, that amendments making fire-fighting compulsory and providing for jail sentences as well as fines for certain infringements of the Act, are desirable. This latter applies especially to the Permit Regulations.

(2) *Organization and Personnel.*

The supervision of the field force was carried on by one Forest Supervisor, with headquarters at Kenora, and three Fire Inspectors, with headquarters at Cochrane, Sudbury, and Parry Sound.

A re-arrangement of Chief Ranger Districts was made, and two more Chief Rangers added to the staff, making a total of thirty-two, with fifty Deputy Chief Rangers. This allowed direct field supervision on the basis of one deputy or chief ranger to every thirteen rangers.

The average daily force was as follows: April, 22; May, 591; June, 1014; July, 1,035; August, 1,027; September, 467; October, 33. The total number

of persons employed for at least a part of the season, was 1,228. Of these 142 resigned, and 69 were dismissed.

Owing to the fire season being early, over half the staff (568) were on duty by the middle of May, and by the end of the month the number had risen to 962. On the fifteenth of June, the total number on the pay roll was 1,014; on the first of July, 1,022; on the fifteenth of July, 1,036; on the first of August, 1,029, and on the fifteenth of August, 1,034. By the end of August, however, it was possible to discontinue several patrols, so that the total number of men on duty was reduced from 1,034 to 977 between the middle and the end of August. On the fifteenth of September, there were only 533 men on duty, and by the end of the month this number had been reduced to 78, practically all of those left being engaged in repairing equipment and finishing up certain local improvements.

As stated in previous reports, one of the chief factors mitigating against a successful controlling of forest fires in Ontario, is the impermanency of the personnel. Fire-ranging is a specialized line of work, requiring special training, and until a permanent organization of trained men is built up, progress will be slow.

### (3) *Expenditure.*

The expenditure for the fiscal year was \$610,534.74, classified as below, with the figures for the preceding years given for comparison. Against this expenditure, protection accounts for the year totalled approximately \$181,047.32.

#### CLASSIFICATION OF EXPENDITURE.

ITEM.	1921	1920	1919	1918
Pay roll.....	\$433,463.02	\$398,919.61	\$405,212.30	\$416,500.00*
Equipment.....	28,384.40	22,287.83	22,899.02	28,350.00
Expendable property.....	19,505.86	16,589.99	13,903.06	10,700.00
Travel (inspection).....	21,034.95	17,495.93	15,826.37	13,440.00
Improvement work.....	3,621.06	1,591.01	4,765.35	4,280.00
Extra fire fighting.....	65,267.79	41,491.24	58,863.92	1,445.00
Express, postage, etc.....	7,926.65	5,401.02	5,646.47	5,365.00
Miscellany.....	31,331.01	2,331.08	5,955.02	6,054.78
TOTAL.....	\$610,534.74	\$506,107.71	\$528,071.51	\$486,134.78

\* Figures rounded off.

### (4) *Fires.*

There was very little snow in the winter of 1920-21 and this disappeared very early in the spring. Then followed very unusual weather conditions, practically no rain falling in some districts until August, and in others not until September. Because of this early hazard it was necessary to place the full ranging staff on duty as fast as possible.

CLASSIFICATION OF FOREST FIRES.  
BY MONTH.

MONTH.	1921	1920	1919	1918	1917
	No.	No.	No.	No.	No.
April and May.....	301	422	362	294	449
June.....	290	309	414	273	320
July.....	475	142	613	124	158
August.....	97	300	377	268	117
September and October.....	106	114	14	6	66
TOTALS.....	1,269	1,287	1,780	965	1,110

BY ORIGIN.

ORIGIN.	1921		1920	1919	1918	1917
	No.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
Settlers.....	122	9.6	11.0	7.7	8.1	8.2
Campers.....	112	8.8	11.7	9.2	9.7	13.9
Railways.....	188	14.8	23.9	37.0	46.5	49.5
Lightning.....	139	11.0	1.1	3.0	3.8	2.9
Logging operations.....	64	5.0	4.6	2.5	4.1	4.1
Miscellaneous.....	14	1.1	7.2	4.3	4.6	3.6
Unknown.....	630	49.7	40.5	36.3	23.2	17.8
	1,269	100.0	100.0	100.0	100.0	100.0

BY SIZE.

SIZE.	1921		1920	1919	1918	1917
	No.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
Quarter acre and under.....	264	20.8	23.2	30.5	40.5	36.3
Over quarter to 5 acres.....	304	24.0	29.4	27.7	33.7	19.5
Over 5 to 10 acres.....	86	6.8	8.1	6.1	6.0	4.8
Over 10 to 100 acres.....	259	20.4	17.1	16.5	13.6	9.5
Over 100 to 500 acres.....	169	13.3	12.0	8.7	5.1	4.7
Over 500 acres.....					1.1	25.2
Over 500 to 1,000 acres.....	70	5.5	5.0	3.3		
Over 1,000 to 10,000 acres.....	103	8.1	4.9	5.9		
Over 10,000.....	14	1.1	0.3	1.3		
	1,269	100.0	100.0	100.0	100.0	100.0

Of the total number of fires, settlers were responsible for 122, or 9.6 per cent. A large part of these (45) were permit fires which for various reasons were allowed to get beyond control. Included in this 122 were also 11 fires set without permits, and in connection with which court proceedings were instituted. Convictions were secured in ten instances, the penalties ranging all the way from a fine of ten dollars and costs to one hundred dollars and costs, and in one case a sentence of thirty days' hard labor was imposed.

The number of fires known to be caused by campers was 112, or 8.8 per cent of the total.



The number of fires directly attributed to railways, with a total of 4,951 miles within the Fire Districts of the Province, was 188, or 14.8 per cent. of the total number from all causes, a decrease in the percentage of 9.1 per cent. over 1920, and 34.7 per cent. over 1917. This decrease is due largely to the increased attention given to locomotive inspection by our staff.

The fires of railway origin were distributed as follows:

RAILWAY.	Per cent. of Total Number of Railway Fires.			
	1921	1920	1919	1918
Canadian National Railway (exclusive of Northern line).....	44.7	32.3	24.6	25.4
Canadian Pacific Railway.....	29.8	27.9	26.3	24.9
Canadian National Railway (Northern Transcontinental line only).....	7.9	16.4	25.9	21.8
Temiskaming and Northern Ontario Railway.....	10.6	9.9	17.9	10.5
Algoma Eastern Railway.....	2.8	5.0	0.3	2.9
Algoma Central Railway.....	1.0	4.4	1.5	1.1
Grand Trunk Railway.....	3.2	4.1	3.5	13.4
	100.0	100.0	100.0	100.0

#### AVERAGE NUMBER OF RAILWAY FIRES PER HUNDRED MILES OF LINE.

Canadian National Railway (exclusive of Northern line).....	5.8
Canadian Pacific Railway.....	3.9
Canadian National Railway (Northern Transcontinental line only).....	1.8
Temiskaming and Northern Ontario Railway.....	6.3
Algoma Eastern Railway.....	5.9
Algoma Central Railway.....	0.6
Grand Trunk Railway.....	1.6

Lightning is credited with starting 139 fires, or 11.0 per cent. of the total number of all fires, a decided increase over previous years, due no doubt to the occurrence of many electrical storms, which were accompanied by little or no precipitation, and fires which ordinarily would have been extinguished by the rain without making themselves apparent, were able this year to gain considerable headway. Fires from this source were restricted largely to a few regions, especially the Algonquin Park district, where 47 of the 139 lightning fires occurred.

A total of 749,534 acres were reported burned over, more than twice the area burned over in 1920, due largely to the exceptional weather conditions prevailing throughout the season. This acreage was classified as below:

#### CLASSIFICATION OF BURNED-OVER AREA.

FOREST CONDITION.	1921		1920	1919	1918	1917
	Acres	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
Timber land.....	99,104	13.2	14.7	26.8	15.8	19.1
Cut-over land (some timber left)...	190,977	25.5	38.8	27.3	37.0	39.2
Young growth (below six inches)...	151,700	20.2	26.7	25.3	23.5	19.5
Barren and grass land.....	307,753	41.1	19.8	20.6	23.7	22.2
	749,534	100.0	100.0	100.0	100.0	100.0

As the table shows, the area of timber land burned over this season was 13.2 per cent. of the total area burned, slightly lower than the figure for last year, and considerably lower than the figure for 1919.

Land which had been cut over, but upon which there was some timber left, and land upon which young growth existed, formed 25.5 and 20.2 per cent. respectively of the area burned. It is upon these two classes of land that we must depend to a large extent for our future timber crop, and the importance of protection on these areas can not be too strongly emphasized. Until a systematic system of brush disposal is inaugurated in connection with logging operations, little can be accomplished in the protection of these cut-over areas.

The high percentage of barren and grass land burned over is due to the large areas of swamps and muskegs burned, the season being so dry that these swamps and muskegs became quite inflammable, a rather unusual occurrence.



On the shore of Lake Nipissing, Parry Sound District

## CLASSIFICATION OF FOREST AREAS BURNED OVER, 1921.

RANGER DISTRICT.	Number of fires	Timber land, mainly coniferous, i.e., soft-wood	Timber land, mainly hardwood	Cut-over land, some softwood left	Cut-over land, some hardwood left	Young growth, mainly coniferous	Young growth, mainly hardwood	Barren land	Grass land	Totals (acres)
<b>I. Western Inspectorate—</b>										
1. Kenora District.....	42	4,563	5	1,117	225	2,422	19	9,226	10	17,587
2. Rainy River.....	62	3,408	3	2,880	635	513	234	408	1	8,082
3. Thunder Bay.....	48	23	3	130	.....	23	42	1,415	134	1,770
4. Nipigon.....	12	8	.....	.....	.....	3	.....	13	5	29
5. C. G. R.—Western.....	10	.....	.....	.....	.....	.....	.....	649	8	657
6. C. G. R.—Central.....	11	.....	.....	.....	.....	.....	.....	25,640	.....	25,640
	185	8,002	11	4,127	860	2,961	295	37,351	158	53,765
<b>II. Northern Inspectorate—</b>										
1. Hearst.....	12	3	.....	810	.....	29	.....	27	.....	869
2. Kapuskasing.....	13	12	.....	540	570	45	.....	140	.....	1,307
3. Cochrane.....	75	1,073	46	8,671	612	2,110	.....	4,532	82	17,126
4. Abitibi.....	17	7,790	.....	15,850	3,800	2,600	.....	24,715	.....	54,755
5. Timmins.....	39	3,018	.....	12,601	1,020	250	.....	9,215	31	26,135
6. Matheson.....	42	6,890	200	360	5,512	2,675	235	16,067	45	31,984
7. New Liskeard.....	14	75	.....	1,300	85	135	.....	255	5	1,855
	212	18,861	246	40,132	11,599	7,844	235	54,951	163	134,031
<b>III. Central Inspectorate—</b>										
1. Soo.....	28	3,434	.....	400	3,908	.....	3,651	21,877	5	33,275
2. Webwood.....	76	1,052	2,002	2,555	3,121	75	1,225	24,823	53	34,906
3. Sudbury.....	64	1,354	169	560	3,733	4,761	7,433	8,488	17	26,515
4. North Bay.....	57	6,634	220	1,491	2,832	7,801	65,762	6,191	376	91,307
5. Mississagi.....	11	440	.....	.....	.....	203	456	124	.....	1,863
6. Chapleau.....	43	405	.....	1,291	109	366	974	13,275	527	16,947
7. Longlac.....	7	171	.....	50	.....	80	.....	101	.....	402
8. Foleyet.....	79	11,252	.....	5,560	3	8,106	.....	2,526	5	27,452
9. Timagami, W. & S.....	18	21,180	3	872	.....	900	100	280	.....	23,335
10. Timagami, East.....	62	2,262	101	1,065	837	214	323	502	2	5,306
11. Timagami, North.....	25	8,404	.....	2,081	1	4,800	.....	11,747	.....	27,033
12. Algoma Central.....	46	6,018	11	28,465	10,782	2,179	806	11,648	320	60,229
	516	62,606	2,506	45,030	25,326	29,485	80,730	101,582	1,305	348,570

Southern Inspectorate.		63	4,957	12	1,010	28,917	10,586	6,288	52,015	.....	103,785
1.	Parry Sound .....	28	15	160	5	315	5	360	2,607	3	3,470
2.	Muskoka .....	61	8	.....	13,512	9,240	4,865	3,776	27,115	100	58,616
3.	Algonquin, North .....	79	23	1	2,440	2,367	282	1,712	21,630	1	28,456
4.	Algonquin, South .....	36	460	100	1,625	1,345	146	849	1,337	185	6,047
5.	Madawaska .....	79	850	286	627	2,500	292	694	7,179	69	12,497
6.	Trent .....	10	.....	.....	.....	.....	103	192	2	.....	297
7.	Eastern Reserve .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Totals .....		356	6,313	559	19,219	44,684	16,279	13,871	111,885	358	213,168
Totals .....		1,269	95,782	3,322	108,508	82,469	56,569	95,131	305,769	1,984	749,534
Per Cent .....		.....	12.8	0.4	14.5	11.0	7.5	12.7	40.8	0.3	100.0
1920 Totals .....		1,287	38,539	14,319	116,312	23,126	46,595	49,135	70,093	732	358,851
1919 Totals .....		1,780	223,022	24,244	102,884	148,471	109,752	123,444	189,701	643	922,161
1918 Totals .....		965	3,123	1,634	5,661	5,513	1,797	5,303	6,465	676	30,172
1917 Totals .....		1,110	73,160	135	148,408	2,160	61,806	13,202	82,959	2,334	384,164



(5) *Permits.*

Permits were issued in 139 townships, as compared with 123 townships in 1920 and 136 townships in 1919. A total of 5,966 permits were issued, covering an area of 23,678 acres, 158 permits less than were issued in 1920.

As shown in the tables below, the greatest number of permits were issued in the districts of Matheson, Cochrane, and Hearst. Most of the burning under permit was done during the month of June, 3,085 permits being granted, with 1,329 in September and 1,154 in May. During the month of July, it was necessary, in some districts, to prohibit burning, owing to the exceptionally dry weather.

## STATEMENT OF PERMITS ISSUED.

RANGER DISTRICT.	NUMBER OF PERMITS.				
	1921	1920	1919	1918	1917
Cochrane.....	1,503	1,982	2,275	3,493	.....
Matheson.....	1,599	1,887	1,691	2,346	.....
New Liskeard.....	916	1,169	1,557	2,179	.....
Hearst.....	1,082	756	702	514	.....
Timmins.....	407	193	199	651	.....
All other districts.....	459	167	211	407	.....
TOTALS.....	5,966	6,154	6,635	9,590	3,486

	NUMBER OF PERMITS.				
	1921	1920	1919	1918	1917
May.....	1,154	1,003	1,536	2,248	.....
June.....	3,085	2,011	2,786	2,899	.....
July.....	364	891	496	2,050	.....
August.....	1,329	1,620	1,475	2,156	.....
September.....	34	629	342	237	.....
TOTALS.....	5,966	6,154	6,635	9,590	3,486

RANGER DISTRICT.	ACREAGE BURNED OVER UNDER PERMIT.				
	1921	1920	1919	1918	1917
Cochrane.....	4,652	4,984	5,437	10,267	.....
Matheson.....	5,442	5,427	4,760	7,371	.....
New Liskeard.....	7,726	9,768	13,521	17,863	.....
Hearst.....	2,124	1,478	1,379	1,134	.....
Timmins.....	988	424	925	1,971	.....
All other districts.....	2,746	686	768	1,072	.....
TOTALS.....	23,678	22,767	26,790	39,683	15,186

(6) *Equipment.*

The most important addition to our equipment this season was ten portable fire-fighting pumps. These pumps are supplied with from 500 to 1,000 feet of hose, and have proved of inestimable value in fire-fighting. There were also purchased 168 pairs of blankets, 29 canoes, 51 tents, 12 railway velocipedes, 2 railway motor cars, and 2 power boats, one 18 feet and the other 27 feet in length.

(7) *Railway Inspection under B.R.C.*

No change was made in the organization of the inspection of fire protective appliances on railway locomotives, two inspectors devoting their whole time to this work.

## LOCOMOTIVE INSPECTION, 1921.

Railway	Number Inspected.					Total Number Engines	Total Number Inspections.					Inspections showing defects	Percentage Defective.				
	Times.																
	1	2	3	4	5 & over		1921	1921	1920	1919	1918	1917	1921	1921	1920	1919	1918
C.P.R...	121	73	47	48	23	312	723	660	499	448	328	60	8.3	16.8	29.9	36.4	19.5
C.N.R. .	65	46	23	27	29	190	498	351	317	232	154	48	9.7	7.9	15.5	22.4	39.6
G.T.R...	86	34	21	5	1	147	242	226	155	184	60	4	1.7	4.8	11.0	28.3	20.0
A.C. & H.B.R. .	4	7	4	..	1	16	35	25	23	36	37	8	22.8	12.0	13.0	38.8	45.9
A.E.R...	...	1	1	3	2	7	28	26	18	20	36	6	21.4	46.1	16.7	70.0	55.5
	276	161	96	83	56	672	1,526	1,288	1,012	920	615	126	8.3	12.8	21.8	32.1	28.3

A total of 41 round-houses was visited, and 1,526 locomotive inspections made, covering 672 locomotives, as against 1,288 inspections in 1920 on 659 locomotives. The above table shows that not only has the number of inspections increased each year, but the percentage of locomotives found defective has steadily decreased from 32.1 per cent. in 1918 to 8.3 per cent. in 1921; and in keeping with this, the percentage of fires definitely attributed to railways has decreased from 46.5 per cent. in 1918 to 14.8 per cent. this year.

The average cost per inspection in 1921 was \$1.70, as compared with \$1.86 in 1920, and \$2.07 in 1919.

## II. FOREST INVESTIGATION.

*Ottawa-Huron Survey.*—This season the work of forest reconnaissance of the Province was continued, and the country within the fire district south of the French and Ottawa Rivers completed, the settled parts of Parry Sound and Muskoka excepted.

For the purposes of comparison, the surveyed area is divided into seven districts, namely, Algonquin Park, Ottawa Valley, Renfrew, Madawaska, Muskoka, Parry Sound, and Georgian Bay. Of these, Madawaska was, in part, covered the previous summer (1920) by three forestry graduates, and the results of both surveys are included in the figures of this report. It may be explained that the boundaries of these districts do not correspond with the existing municipal boundaries, except in the case of Algonquin Park. Ottawa Valley is taken as the fringe of country between the Park and Ottawa River. Renfrew includes those portions of Nipissing and Renfrew counties south-east of the Park. Madawaska takes in northern and eastern Hastings and the northerly portions of Frontenac and Lennox and Addington. Muskoka refers only to a small north-eastern part of that district. Georgian Bay is applied to the western portion of Parry Sound and Muskoka districts. Parry Sound covers the remainder of Parry Sound district, except the central north and south alienated strip. Trent refers to northern Peterborough and central and western Hastings.

In order to fully understand this report, a few remarks on the subject of ownership conditions will be necessary.

*Ownership.*—Of the total area, about 65 to 70 per cent. remains in the Crown. In the Algonquin Inspectorate (Algonquin Park, Ottawa Valley, Renfrew), this represents approximately 90 per cent. of the total area. Here, the patented lands exist as a fringe of varying width along the Ottawa River front, and as more or less solid masses with intervening and scattered Crown lands, in Renfrew. In the Georgian Bay Inspectorate (Georgian Bay, Parry Sound, Muskoka), Crown lands comprise 60 per cent. of the total area. The bulk of these are located in a solid block in the north-east sector and on the shores of Georgian Bay; the remainder are found in the south-east sector, along the eastern border of the Inspectorate and adjacent to Algonquin Park. In the Trent Inspectorate (Madawaska and Trent), the distribution of Crown and patented lands is quite different. Instead of being located in separate localities, the Crown lands are interspersed throughout the area in blocks of up to 30 or 40 square miles, surrounded and cut off by the holdings of settlers. Thus we have many smaller forests, more or less set off by themselves, with agricultural land in between.

Land under license comprises 9,587 square miles, of which the Algonquin Inspectorate forms 55.6 per cent., Parry Sound 26.1 per cent., and Trent Inspectorate 18.3 per cent. This relation bears a striking resemblance to the timbered areas yet containing commercial supplies within the Inspectorates, as out of a total of 1,507,539 acres, Algonquin forms 58.5 per cent., Parry Sound 24.7 per cent., and Trent 16.6 per cent.

The diversity of ownership conditions within the Inspectorate, indicating, as they do, the relative occurrence of timber or young growth, will undoubtedly call for different forms of forest management.

In the survey proper, the following will, in brief, describe the classification used, the methods employed, and some of the results obtained. Further information, regarding composition of parties, routes, cost of survey, dates, etc., is given in the appendix.

*Field Work.*—Forest type maps were prepared in the field, delimiting cleared land from barrens and forest. The forest area was differentiated into hardwood, coniferous and mixed types, with the poplar-birch type separated from the other hardwoods. The first three types were classified as to condi-

tion, namely, virgin, moderately culled, severely culled, second growth, and young growth. The poplar-birch stands were thrown into two groups, on the basis of whether white pine reproduction was in evidence or not. The mixed type was defined as containing more than 20 per cent. numerically of either hardwood or conifers among the dominants. Young growth corresponds to saplings up to 4 inches; second growth to polewood above 4 inches.

On these maps, showing forest types and conditions, there were also placed roads, trails, abandoned roads, railway lines, existing telephone lines, watershed boundaries, and good locations marked for lookout points for fire ranging use. Along with this field mapping, information was compiled by townships, covering such points as present fire hazards, location and number of male help available for fire fighting, wood-using industries and mills in existence, nature and extent of other industries such as farming, mining, game and fish, tourist traffic, population, general suitability of the area for agriculture, etc.

From Calabogie, two parties commenced work on the settled sector south-east of Algonquin Park (Renfrew). With this completed, a third party was formed, and all three followed respective railway lines—C.P.R., C.N.R., G.T.R.—thence along the Ottawa River and through the Park. On the completion of the Algonquin Park area, one party struck across-country from Trout Creek to C.N.R., and south, so covering the Parry Sound sector. The other two parties attacked the Georgian Bay sector, one party following the C.P.R. north from Parry Sound, and the other travelling south by launch and canoe.

Effective use of Ford cars in the more settled sections of Ottawa Valley, Parry Sound, Renfrew, Madawaska, and of canoes in Algonquin Park and Georgian Bay sectors, combined to speed up the work and minimize waste of power and energy.

Sixteen forestry students were employed in the summer's work, working under the immediate direction of Messrs. G. M. Dallyn, P. McEwen, and W. A. Delahey of this Branch. Two parties of eight and one of three formed separate camps. The method of work was by foot, with distances computed by pacing. Men worked in pairs. Each pair was given a block of territory to cover, involving about twenty miles travelling, daily. This may mean an area from nine to fifteen square miles, depending on the nature of the settlement, i.e., existing roads, etc., and topography. Boundaries of forest types were checked from lookout sites. Railways, junction of roads, surveyed lakes, rivers, lot lines, served as tying in points, and in less settled districts, compass triangulation was employed.

In all, 7,682,518 acres were examined at a cost of one-quarter of a cent per acre.

*Forest Composition.*—Of 7,213,372 acres of land investigated in 1920 and 1921, 79.2 per cent. is forested, 10.9 per cent. is barren, and 9.9 cleared. Lakes form an additional area of 469,146 acres, or 6.1 per cent. of the total area examined.

First, let us discuss the composition of the forest area. The composition of the forested area (5,710,291 acres) is made up of 36.6 per cent. mixed; 22.4 per cent. poplar-birch; 19.1 per cent. hardwood; 18.2 per cent. poplar-birch-coniferous; and 3.7 per cent. coniferous. The mixed type occupies over one-half of the forested area in each of Algonquin Park, Parry Sound, and Georgian Bay districts, and these contain 73.2 per cent. of the total mixed forest. The



remaining sectors have relatively more cleared land, an older logging history, a consequent longer fire record and therefore, a much smaller proportion of this desirable composition.

Of the forested area, 2,319,334 acres, or 40.6 per cent., represents combinations of poplar and birch, with and without conifers. Of this, 44.8 per cent. contains a noticeable pine admixture. In the unsettled timbered areas of Algonquin Park and Parry Sound, this type represents but one-fifth of the forested land, whereas in the remaining settled sections, it represents one-third.

3.7 per cent., or 206,935 acres, were classified as coniferous forests. Almost one-half of this is, again, located in Algonquin Park.

Hardwoods cover 19.1 per cent., or 1,097,419 acres, of the forest. This type usually represents a culled virgin, mixed stand, the conifers having been largely removed. This condition is particularly noticeable in the Muskoka region, representing here, one-half the forest. In Algonquin Park, Parry Sound and Madawaska, one-fifth, and in the Ottawa, Georgian Bay sectors, one-twentieth of the forest is so classified.

*Conditions.*—The following outstanding features in the various forest conditions may be of interest. Only 26.4 per cent. of the present total forest area is virgin or moderately culled, that is, one-quarter of the forested area contains commercial timber, represented by 51.5 per cent. mixed, 45.1 per cent. hardwood, and only 3.4 per cent. coniferous composition. Algonquin Park contains three-fifths, Parry Sound one-fifth, of the mixed, while, of the hardwoods, Algonquin Park contains one-half and Madawaska one-quarter.

Areas classed as severely culled form 10.6 per cent. of the forest, and include a diversity of conditions, mainly due to the almost inevitable fire following the logger. This may be represented by alternate patches of young growth and small stands of timber, or by second growth stands with scattered mature trees of indifferant character. This type of forest presents a particularly vicious fire hazard to commercial stands, owing to the accumulated slash following recent logging operations. This condition is particularly true of the Parry Sound district, where one-fifth of the forest was so classified.

Second growth in the mixed-hardwood-coniferous forests covers 18.7 per cent. of the forest area, or 1,066,556 acres. Four-fifths of this is mixed composition—a satisfactory condition of reproduction—36.2 per cent. of which is found in Algonquin Park.

Young growth in the mixed-hardwood-coniferous forest is represented by 210,296 acres, or 3.7 per cent. of the forested area. Of this, 64.8 per cent. is mixed composition, over three-fifths of which is found in the Georgian Bay sector.

Second growth poplar-birch stands occupy 529,555 acres, or 9.3 per cent. of the forested area. 73.0 per cent. of this contains a coniferous admixture—mainly white pine—of which Algonquin Park comprises 41.6, Ottawa Valley 28.9, and Madawaska 21.7 per cent., while Georgian Bay, Parry Sound, and Madawaska districts, together, only represent 1.9 per cent. of this type. There remain 143,317 acres where conifers are not noticeably present. With this type of forest, there is usually present an understudy of balsam or hemlock, and in the more open stands, pine. The future of such forests is, therefore, relatively satisfactory, always providing fire is kept out.

Young growth of poplar-birch type occupies 1,789,779 acres, or 31.3 per cent. (almost one-third), of the total forest. Of this, 36.9 per cent. has coniferous admixture of which Madawaska contains 64.3 per cent. One-fifth of

the total forested area is then in a semi-barren condition, supporting, in the main, poplar-birch degenerates with an occasional fire-scarred pine.

Of the total area, barrens occupy 10.9 per cent., or 790,092 acres, a pitiful representation of the original pinery. This condition is most pronounced in the Madawaska and Georgian Bay sectors.

Cleared land comprises 9.9 per cent., or 712,989 acres. Of this, the settled district south of Algonquin Park, represents 76.9 per cent.; Ottawa Valley and Parry Sound, together, 21.3; while, in Algonquin Park and Georgian Bay, we find only 1.8 per cent. From the nature of the country, the presence of so many abandoned farms, and the general appreciation of most of this sector as a crop-producing area, it is not likely that the present percentage of cleared land will increase.

*Summary.*—A study of these pages reveals the fact that, as a result of logging operations and repeated fires, over 60 per cent. of the original forest—which was of a mixed or coniferous character—is now occupied by less desirable types, and instead of the former pineries, occupying one-half the area, we find only 3.1 per cent. thus occupied, pine having been superseded by poplar-birch and barrens on the remaining areas.

In summing up, the conditions over the whole area, excluding cleared land, are shown in the following table.

TABLE SHOWING BY PERCENTAGES THE RELATIONSHIP OF CONDITIONS ON THE POTENTIAL FOREST AREA.

CONDITION.	DISTRICT.						
	A.	O.	R.	Ma.	M.	P.S.	Totals
Virgin and moderately culled.....	44.2	5.2	11.3	13.9	65.5	28.7	23.3
Severely culled.....	6.2	4.4	9.4	10.0	2.9	20.3	9.3
Second growth.....	35.3	38.4	16.6	19.4	1.4	18.4	24.6
Young growth.....	8.3	40.6	40.8	46.7	30.2	20.0	30.7
Barrens.....	6.0	11.4	21.9	10.0	0.0	12.6	12.1

A.—Algonquin Park; R.—Renfrew; Ma.—Madawaska; M.—Muskoka;  
P.S.—Parry Sound; O.—Ottawa Valley.

In the above table, the potential forest land is classified as follows: Timber, i.e., virgin and moderately culled areas, 23.3 per cent.; cordwood and distillation material or severely culled areas, 9.3 per cent.; second growth, 24.6 per cent.; young growth, 30.7 per cent.; and barrens, 12.1 per cent.

From this we can see the varied character of the relationship of the forest conditions in the various districts, for example, in Algonquin Park, we find 44.2 per cent. timber, 35.3 per cent. second growth, with only 8.3 per cent. young growth; while in the Madawaska, only 13.9 per cent. timber land remains, second growth occupying 19.4 per cent., with young growth representing almost 50 per cent. of the area. It also shows, in the case of Muskoka district, practically no intermediate or second growth.

The outstanding feature of the present condition of these 6,500,000 acres, as a whole, is the undesirable transformation by the agency of fire after logging. The three types—poplar-birch with coniferous reproduction, the poplar-birch without, and the barrens—represent, in general, logged-over areas burned an

increasingly large number of times, and were once largely occupied by pine. In addition, we may assume that the present areas, classed as mixed young and second growth, were formerly largely pine. These several classes now occupy 62.3 per cent. of the potential forest area, where once pine stands predominated.

It is of interest to note the future outlook as regards the next crop of softwood saw timber on this large area of over four million acres. We may fairly assume that a relatively satisfactory reproduction of pine occurs on the area now occupied by immature mixed growth—15.1 per cent. Of the remainder, a partial pine restocking occurs only on the areas typed as poplar-birch-coniferous, or 15.8 per cent. The balance (31.4 per cent.), typed as poplar-birch and barrens and totalling 2,072,719 acres, is without hope of coniferous growth. This condition is most prevalent in the more settled districts, like Madawaska and Renfrew, and in the sparsely settled Georgian Bay sector, through which two railway lines run. The worst sector is that of Renfrew, adjoining the timbered region of Algonquin Park.

The above represents the universal history of forest areas after logging. Until brush disposal accompanies all logging operations, this degeneration of forest growth will go on.

Appended are the detailed tables.

## ALGONQUIN, GEORGIAN BAY, TRENT FOREST SURVEY, 1921—CLASSIFICATION OF LANDS.

	AIRY		ALGONA, S.		ALGONA, N.		ALICE		Anglin	
	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
I. CLEARED LAND.....	3,390	7.3	12,865	38.7	9,405	39.6	32,292	56.8		
II. FOREST:										
1. Hardwood:										
Virgin and moderately culled.....	1,050									
Severely culled.....	4,175		505							
Second growth.....					194					
Young growth.....			110							
2. Coniferous:	5,225	11.4	615	1.9	194	0.8				
Virgin and moderately culled.....										
Severely culled.....			705		40		140		800	
Second growth.....	625		1,355		100		198		3,040	
Young growth.....			290		60		284			
3. Mixed:	625	1.3	2,350	7.1	200	0.8	622	1.1	3,840	8.0
Virgin and moderately culled.....									1,740	
Severely culled.....	820		315		238		1,804			
Second growth.....			12,530				2,522		38,434	
Young growth.....							2,536			
4. Poplar-Birch, 5 to 20 per cent. coniferous reproduction:	820	1.8	12,845	38.6	238	1.0	6,862	12.1	40,174	83.8
Standards and poles.....	75		480		250		1,684		2,130	
Saplings.....			2,030				220		925	
5. Poplar-Birch, without coniferous reproduction:	75	0.1	2,510	7.6	250	1.1	1,904	3.4	3,055	6.4
Standards and poles.....	50				420		10,388		565	
Saplings.....	1,850		2,045		12,984		4,716		130	
III. Barrens.....	1,900	4.1	2,045	6.1	13,404	56.7	15,104	26.6	695	1.5
	34,290	74.0							155	0.3
Land area investigated.....	46,325		33,230		23,691		56,784		47,920	



## ALGONQUIN, GEORGIAN BAY, TRENT FOREST SURVEY, 1921—CLASSIFICATION OF LANDS.—Continued.

	BAXTER		BAGOT		BALLANTYNE		BARRON		BETHUNE	
	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
I CLEARED LAND.....	1,455	4.2	14,485	21.6					2,755	6.0
II. FOREST:										
1. Hardwood:										
Virgin and moderately culled.....	870				5,385				19,205	
Severely culled.....					6,290				14,410	
Second growth.....	1,830		160				360			
Young growth.....							490			
2. Coniferous:										
Virgin and moderately culled.....	2,700	7.7	160	0.2	11,675	26.2	850	1.9	33,615	73.6
Severely culled.....					290					
Second growth.....					105		6,540			
Young growth.....					1,455					
3. Mixed:										
Virgin and moderately culled.....					1,850	4.1	6,540	14.4		
Severely culled.....					17,680				3,460	
Second growth.....	12,570		27,830		380		12,815		2,140	
Young growth.....					360					
4. Poplar-Birch, 5 to 20 per cent. coniferous reproduction:	12,570	36.1	27,830	41.4	23,400	52.6	12,815	28.2	5,600	12.2
Standards and poles.....	960		7,912				17,260			
Saplings.....	7,115		11,066						105	
5. Poplar-Birch without coniferous reproduction:	8,075	23.1	18,978	28.2			17,260	38.2	105	0.2
Standards and poles.....			5,572		570		2,850			
Saplings.....	7,835		219		340		4,980		90	
III. BARRENS.....	7,835	22.4	5,791	8.6	910	2.0	7,830	17.3	90	0.2
Land area investigated.....	2,270	6.5			6,680	15.1			3,575	7.8
	34,905		67,244		44,515		45,295		45,740	

ALGONQUIN, GEORGIAN BAY, TRENT, FOREST SURVEY, 921—CLASSIFICATION OF LANDS.—Continued.

	BLAIR		BLYTHFIELD		BOULTER		BONFIELD		BOWER	
	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
I CLEARED LAND.....	40	0.0	1,864	5.6	4,840	10.8	17,540	35.0	140	0.1
II. FOREST:										
1. Hardwood:										
Virgin and moderately culled.					1,095		710			
Severely culled.....	4,590				1,390					
Second growth.....					570		2,160			
Young growth.....					120		735			
2. Coniferous:										
Virgin and moderately culled.	4,590	7.0			3,175	6.6	3,605	7.2		
Severely culled.....	5,650								945	
Second growth.....	2,820								555	
Young growth.....					90					
3. Mixed:										
Virgin and moderately culled.	8,470	12.8			90	0.2			1,500	4.0
Severely culled.....	4,170				1,230		780		16,850	
Second growth.....	660		680		1,970					
Young growth.....	36,420		11,138		4,720		4,355		9,585	
4. Poplar-Birch, 5 to 20 per cent. coniferous reproduction:										
Standards and poles.....	41,250	62.6	11,818	35.4	7,920	16.5	6,400	12.7	2,6435	69.8
Saplings.....	5,365		18,200		3,450		1,820			
5. Poplar-Birch, without coniferous reproduction:					830		2,730			
Standards and poles.....	5,365	8.2	18,200	54.3	4,280	8.9	4,550	9.1		
Saplings.....	3,640				1,860		1,060			
III. BARRENS.....					14,995		14,925			
Land area investigated.....	3,640	5.5			16,855	35.2	15,985	31.7		
	2,540	3.9	1,556	4.7	10,430	21.8	2,175	4.3	9,930	26.1
	65,895		33,438		47,590		50,255		38,005	

## ALGONQUIN, GEORGIAN BAY, TRENT, FOREST SURVEY, 1921—CLASSIFICATION OF LANDS.—Continued.

	BOYD		BISHOP		BURPEE		BROWN		BURTON	
	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
I. CLEARED LAND.....			80	0.2	430	1.1				
II. FOREST:										
1. Hardwood:										
Virgin and moderately culled.....	14,180		2,365						1,840	
Severely culled.....									350	
Second growth.....	400				105				440	
Young growth.....										
2. Coniferous:			2,365	6.2	105	0.3			2,630	5.0
Virgin and moderately culled.....		23.0								
Severely culled.....										
Second growth.....	965		960				510			
Young growth.....										
3. Mixed:			960	2.5			510	1.2		
Virgin and moderately culled.....	1,965	1.5								
Severely culled.....			24,805		840		1,895		2,400	
Second growth.....	4,800		4,995		13,120		3,655		605	
Young growth.....			1,570		2,220		6,580		620	
			1,050		450		960		330	
4. Poplar-Birch, 5 to 20 per cent. coniferous reproduction:	6,765	10.6	32,420	85.2	16,630	43.3	13,090	29.8	3,955	7.7
Standards and poles.....	9,250		180							
Saplings.....	1,850		130				3,405		2,350	
5. Poplar-Birch, without coniferous reproduction:	11,100	17.5	310	0.8			3,405	7.7	2,350	4.5
Standards and poles.....	2,260									
Saplings.....	5,845		1,440				12,975		9,320	
III. BARRENS.....	8,105	12.8	1,440	3.8			12,975	29.6	9,320	17.8
	21,985	34.6	500	1.3			13,900	31.7	33,880	65.0
Land area investigated.....	63,500		38,075		38,410		43,880		52,135	

ALGONQUIN, GEORGIAN BAY, TRENT, FOREST SURVEY, 1921—CLASSIFICATION OF LANDS.—Continued.

	BRONSON		BROUGHAM		BRUDENELL		BUCHANAN		BURNS	
	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
I. CLEARED LAND.....	.....	.....	9,090	14.2	15,726	30.0	4,800	25.2	148	0.3
II. FOREST:										
1. Hardwood:										
Virgin and moderately culled.....	180	.....	380	.....	528	.....	.....	.....	3,260	.....
Severely culled.....	.....	.....	80	.....	.....	.....	.....	.....	7,870	.....
Second growth.....	.....	.....	8,060	.....	12,418	.....	.....	.....	.....	.....
Young growth.....	.....	.....	.....	.....	.....	.....	380	.....	.....	.....
2. Coniferous:										
Virgin and moderately culled.....	180	0.4	8,520	13.3	12,946	24.7	380	2.0	11,130	24.9
Severely culled.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Second growth.....	1,450	.....	360	.....	.....	.....	590	.....	146	.....
Young growth.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
3. Mixed:										
Virgin and moderately culled.....	1,450	3.0	360	0.6	.....	.....	590	3.1	146	0.3
Severely culled.....	.....	.....	575	.....	.....	.....	.....	.....	8,902	.....
Second growth.....	44,655	.....	19,020	.....	13,868	.....	725	.....	676	.....
Young growth.....	.....	.....	.....	.....	.....	.....	1,465	.....	2,690	.....
4. Poplar-Birch, 5 to 20 per cent. coniferous reproduction:										
Standards and poles.....	44,655	92.7	19,595	30.7	13,868	26.5	2,190	11.5	12,268	27.6
Saplings.....	.....	.....	10,550	.....	1,792	.....	390	.....	6,202	.....
5. Poplar-Birch, without coniferous reproduction:										
Standards and poles.....	.....	.....	10,550	16.5	2,078	4.0	390	2.0	6,732	15.0
Saplings.....	1,890	.....	9,585	.....	7,782	.....	100	.....	1,666	.....
III. BARRENS.....	1,890	3.9	9,585	15.0	7,782	14.8	10,665	56.2	7,484	16.7
Land area investigated.....	48,175	.....	63,900	9.7	52,400	.....	19,015	.....	6,780	15.2
									44,688	.....



## ALGONQUIN, GEORGIAN BAY, TRENT, FOREST SURVEY, 1921—CLASSIFICATION OF LANDS.—Continued.

	BUTT		BIGGAR		CAMERON		CARDWELL		CALVIN	
	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
I. CLEARED LAND.....										
II. FOREST:										
1. Hardwood:										
Virgin and moderately culled.....	14,605		4,740							
Severely culled.....			60							
Second growth.....					2,285					
Young growth.....					920					
					920					
2. Coniferous:										
Virgin and moderately culled.....	14,605	31.5	4,800	10.1	4,125	4.6				
Severely culled.....	1,280									
Second growth.....	300		990		1,430					
Young growth.....	325				3,055		160		80	
					2,280				140	
3. Mixed:										
Virgin and moderately culled.....	1,905	4.1	990	2.1	6,765	7.5	160	0.7	220	0.6
Severely culled.....	17,410		16,870		1,785					
Second growth.....	11,215		17,950		5,280		10,150			
Young growth.....					19,120		580		505	
					1,330					
4. Poplar-Birch, 5 to 20 per cent. coniferous reproduction:										
Standards and poles.....	28,625	61.8	34,820	73.0	27,515	30.3	10,730	45.7	505	1.6
Saplings.....					12,325				5,115	
					12,475				1,640	
5. Poplar-Birch, without coniferous reproduction:										
Standards and poles.....					24,800	27.3			6,755	19.1
Saplings.....										
									7,445	
	1,200		7,080		6,435		11,310		13,420	
	1,200	2.6	7,080	14.8	6,435	7.1	11,310	48.3	20,865	59.1
					17,980	19.8				
III. Barrens.....										
Land area investigated.....	46,335		47,690		90,695		23,445		35,330	

ALGONQUIN, GEORGIAN BAY, TRENT, FOREST SURVEY, 1921—CLASSIFICATION OF LANDS.—Continued.

	CANISBAY		CARLING		CHISHOLM		CHRISTIE		CLANCY	
	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
I. CLEARED LAND.....			2,345	4.1	18,640	36.3	5,770	12.7		
II. FOREST:										
1. Hardwood:										
Virgin and moderately culled.....										
Severely culled.....			940				1,590			
Second growth.....			5,995		12,105		7,775			
Young growth.....			2,660		160					
					100		825			
2. Coniferous:			9,595	16.8	12,365	24.0	10,190	22.3		
Virgin and moderately culled.....										
Severely culled.....	355								1,690	
Second growth.....			575						1,130	
Young growth.....					1,150					
3. Mixed:			575	1.0	1,150	2.2			2,820	5.3
Virgin and moderately culled.....		0.8								
Severely culled.....	36,870								17,850	
Second growth.....	110		540				15,405		480	
Young growth.....	3,290				1,180		435		15,870	
4. Poplar-Birch, 5 to 20 per cent. coniferous reproduction:					100					
Standards and poles.....	40,270	88.4	540	0.9	1,280	2.5	15,840	34.9	34,200	64.0
Saplings.....			110						10,775	
			9,400							
5. Poplar-Birch without coniferous reproduction:			9,510	16.7					10,775	20.1
Standards and poles.....										
Saplings.....			1,165		16,825		13,705		2,270	
III. BARRENS.....										
Land area investigated.....	1,060	2.3	1,165	2.2	16,825	32.7	13,705	30.1	2,270	4.3
	3,850	8.5	33,255	58.3	1,170	2.3			3,390	6.3
	45,535		56,985		51,430		45,505		53,455	

## ALGONQUIN, GEORGIAN BAY, TRENT, FOREST SURVEY, 1921—CLASSIFICATION OF LANDS.—Continued.

	CLARA		CONGER		COWPER		CROFT		DEACON	
	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
I. CLEARED LAND.....	1,235	2.0	180	0.3			2,345	11.3	40	0.1
II. FOREST:										
1. Hardwood:										
Virgin and moderately culled.....					500				9,865	
Severely culled.....							1,485			
Second growth.....	260						90			
Young growth.....	350									
2. Coniferous:										
Virgin and moderately culled.....	610	1.0			500	3.6	1,575	7.6	9,865	8.71
Severely culled.....										
Second growth.....	6,880		50		330				1,480	
Young growth.....	140									
3. Mixed:										
Virgin and moderately culled.....	7,020	11.2	50	0.0	330	2.4			1,480	2.8
Severely culled.....										
Second growth.....	3,170		7,830		40		2,205		1,280	
Young growth.....	10,150		13,515		1,165		4,350		5,210	
	650								5,720	
									3,835	
4. Poplar-Birch, 5 to 20 per cent. coniferous reproduction:										
Standards and poles.....	13,970	22.4	21,345	40.4	1,205	8.6	8,590	41.5	16,045	30.5
Saplings.....	15,175				445				7,045	
	7,255		2,415		7,720		875		3,445	
5. Poplar-Birch, without coniferous reproduction:										
Standards and poles.....	22,430	35.9	2,415	4.6	8,165	58.2	875	4.2	10,490	20.0
Saplings.....	2,155								14,405	
	7,425		20,005		3,815		1,690		260	
III. BARRENS.....										
	9,580	15.3	20,005	38.0	3,815	27.2	1,690	8.2	14,665	27.9
	7,600	12.2	8,780	16.7			5,640	27.3		
Land area investigated.....	62,445		52,775		14,015		20,715		52,588	

## ALGONQUIN, GEORGIAN BAY, TRENT, FOREST SURVEY, 1921—CLASSIFICATION OF LANDS.—Continued.

	DEVINE		DICKENS		DICKSON		EDGAR		FERGUSON	
	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
I. CLEARED LAND.....	155	0.3							210	1.0
II. FOREST:										
1. Hardwood:										
Virgin and moderately culled.....	32,405				170				710	
Severely culled.....									1,290	
Second growth.....										
Young growth.....										
2. Coniferous:	32,405	68.2			170	0.4			2,000	9.5
Virgin and moderately culled.....										
Severely culled.....					480					
Second growth.....					1,560					
Young growth.....					960				4,610	
3. Mixed:										
Virgin and moderately culled.....										
Severely culled.....	9,050		4,720		3,000	6.8	4,610	8.6		
Second growth.....	1,005		1,510		7,810					
Young growth.....	1,865		1,570		4,625					
4. Poplar-Birch, 5 to 20 per cent. coniferous reproduction:					28,025		27,280		645	
Standards and poles.....	11,920	25.1	7,800	20.4	40,460	92.1	27,280	51.3	645	3.1
Saplings.....			1,890		320		18,350		4,160	
5. Poplar-Birch, without coniferous reproduction:										
Standards and poles.....			3,100	8.1	320	0.7	18,350	34.5	4,160	19.6
Saplings.....			9,980				2,320			
III. BARRENS.....			9,980	26.1			2,995	5.6		
Land area investigated.....	3,060	6.4	17,290	45.4					14,150	66.8
	47,540		38,170		43,950		53,235		21,165	



## ALGONQUIN, GEORGIAN BAY, TRENT, FOREST SURVEY, 1921—CLASSIFICATION OF LANDS.—Continued.

	FERRIS		FERRIS		FINLAYSON		FITZGERALD		FRASER	
	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
I. CLEARED LAND.....	955	2.0	11,755	18.7					2,918	5.4
II. FOREST:										
I. Hardwood:										
Virgin and moderately culled.....	280				40,455		1,690		1,294	
Severely culled.....										
Second growth.....			930				2,910			
Young growth.....			80							
2. Coniferous:										
Virgin and moderately culled.....	280	0.6	1,010	1.6	40,455	76.7	4,600	8.8	1,294	2.4
Severely culled.....	6,380									
Second growth.....			100						328	
Young growth.....										
3. Mixed:										
Virgin and moderately culled.....	6,380	13.0	100	.2					328	0.6
Severely culled.....	12,480				9,205		1,465			
Second growth.....	2,035				1,390		470			
Young growth.....	10,535		3,575		1,515		16,270		350	
Young growth.....			1,550							
4. Poplar-Birch, 5 to 20 per cent. coniferous reproduction:	25,050	51.2	5,125	8.1	12,110	22.9	18,205	34.8	350	0.6
Standards and poles.....										
Saplings.....			1,980		190		13,470		916	
5. Poplar-Birch, without coniferous reproduction:										
Standards and poles.....			1,980	3.1	190	0.4	27,530	52.7	916	1.7
Saplings.....	300		1,260						3,414	
Standards and poles.....			41,730						44,468	
III. BARRENS.....	300	0.6								
Standards and poles.....	15,915	32.6	42,990	68.3					47,882	88.0%
Saplings.....									308	0.0%
Land area investigated.....	48,880		62,960		52,755		52,290		53,996	

## ALGONQUIN, GEORGIAN BAY, TRENT, FOREST SURVEY, 1921—CLASSIFICATION OF LANDS.—Continued.

	FRANKLIN		FREEMAN		FRESWICK		GIBSON		GRATTAN	
	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
I. CLEARED LAND.....			560	1.0			890	1.6	27,556	67.
II. FOREST:										
1. Hardwood:										
Virgin and moderately culled.....										
Severely culled.....	1,510				350				9,297	
Second growth.....										
Young growth.....									1,965	
2. Coniferous:										
Virgin and moderately culled.....	1,510	27.2			350	0.8			11,262	16.4
Severely culled.....										
Second growth.....					3,885				830	
Young growth.....									350	
3. Mixed:										
Virgin and moderately culled.....					3,885	9.0			1,180	1.7
Severely culled.....					29,610		11,670		130	
Second growth.....			5,390		570		6,190		1,050	
Young growth.....			24,640		4,510		6,175		3,580	
4. Poplar-Birch, 5 to 20 per cent. coniferous reproduction:										
Standards and poles.....			30,030	55.7	34,690	80.1	24,035	43.9	5,480	8.0
Saplings.....			600		3,650		21,975		2,975	
5. Poplar-Birch, without coniferous reproduction:										
Standards and poles.....			600	1.1	4,040	9.3	21,975	40.1	14,560	21.2
Saplings.....	4,040		15,460		350		7,725		1,700	
III. Barrens.....	4,040	72.8	15,460	28.7	350	0.8	7,725	14.1	8,690	12.6
Land area investigated.....	5,550		7,300	13.5			160	0.3		
			53,950		43,315		54,785		68,728	

## ALGONQUIN, GEORGIAN BAY, TRENT, FOREST SURVEY, 1921—CLASSIFICATION OF LANDS.—Continued.

	GRIFFITH		GUTHRIE		GURD		HAGARTY		HAGERMAN	
	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
I. CLEARED LAND.....	3,685	8.1			5,585	19.7	26,722	47.3	5,725	12.5
II. FOREST:										
1. Hardwood:										
Virgin and moderately culled.....			235		1,080		328		1,160	
Severely culled.....					4,725		120		3,600	
Second growth.....	2,180						240			
Young growth.....	760				4,860					
2. Coniferous:	2,940	6.4	235	0.4	10,665	37.6	688	1.2	4,760	10.4
Virgin and moderately culled.....							366			
Severely culled.....										
Second growth.....	140		7,790				1,622		2,560	
Young growth.....							128			
3. Mixed:	140	0.3	7,790	13.3			2,116	3.8	2,560	5.6
Virgin and moderately culled.....										
Severely culled.....			6,595		1,855		1,690		4,960	
Second growth.....	145				2,655		452		11,350	
Young growth.....	2,390				5,190		6,946		900	
4. Poplar-Birch, 5 to 20 per cent. coniferous reproduction:	2,535	5.6	6,595	11.2	9,700	34.2	9,588	16.9	17,210	37.6
Standards and poles.....			41,445				2,034			
Saplings.....	2,925						3,256			
5. Poplar-Birch without coniferous reproduction:	2,925	6.4	41,445	70.7			5,290	9.4		
Standards and poles.....					150		1,298			
Saplings.....	10,080		2,305		1,215		10,814		11,145	
III. BARRENS.....	10,080	22.2	2,305	3.9	1,365	4.8	12,112	21.4	11,145	24.4
Land area investigated.....	23,200	51.0	270	0.5	1,065	3.7			4,360	9.5
	45,505		58,640		28,380		56,516		45,760	

## ALGONQUIN, GEORGIAN BAY, TRENT, FOREST SURVEY, 1921—CLASSIFICATION OF LANDS.—Continued.

	HARDY		HARRISON		HEAD		HIMSWORTH		HINDON	
	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
I. CLEARED LAND.....	1,480	4.0			2,690	4.5	2,175	23.4	600	1.6
II. FOREST:										
1. Hardwood:										
Virgin and moderately culled.....					1,780				8,580	
Severely culled.....	190		280							
Second growth.....							320			
Young growth.....										
2. Coniferous:										
Virgin and moderately culled.....	190	0.5	280	0.5	1,780	3.0	320	3.4	8,580	23.5
Severely culled.....	110		170		210					
Second growth.....	550				420					
Young growth.....	290		490							
3. Mixed:										
Virgin and moderately culled.....	950	2.6	660	1.1	630	1.1				
Severely culled.....	17,585									
Second growth.....	10,890		200		1,640				20,340	
Young growth.....	1,070		4,440		4,780		110			
Young growth.....	320		51,620							
4. Poplar-Birch, 5 to 20 per cent. coniferous reproduction:	29,865	80.5	56,260	93.0	6,420	10.7	110	1.2	20,340	55.7
Standards and poles.....					15,610					
Saplings.....			1,304		25,410					
5. Poplar-Birch, without coniferous reproduction:										
Standards and poles.....	220				900					
Saplings.....	3,420				3,185		4,440		7,010	
III. BARRENS.....	3,640	9.8			4,085	6.8				
Land area investigated.....	955	2.6	1,950	3.2	3,350	5.6	4,440	47.8	7,010	19.2
	37,080		60,454		59,975		9,295	24.2	36,530	



## ALGONQUIN, GEORGIAN BAY, TRENT, FOREST SURVEY, 1921—CLASSIFICATION OF LANDS.—Continued.

	HUNTER		JOLY		JONES		LAURIER		LAUDER	
	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
I. CLEARED LAND.....			720	2.2	3,548	11.6	1,545	3.8	640	1.8
II. FOREST:										
1. Hardwood:										
Virgin and moderately culled.....	19,610		9,440		2,818		7,520		4,780	
Severely culled.....			2,960				4,130			
Second growth.....			8,560		104		9,590		90	
Young growth.....			130						50	
2. Coniferous:										
Virgin and moderately culled.....	19,610	41.9	21,090	64.1	2,922	9.6	21,240	52.1	4,920	13.7
Severely culled.....	540									
Second growth.....	190						955			
Young growth.....										
3. Mixed:										
Virgin and moderately culled.....	730	1.6					955	2.3		
Severely culled.....	10,485		470		226				1,530	
Second growth.....	970						1,425			
Young growth.....	525		570		224		845		3,035	
4. Poplar-Birch, 5 to 20 per cent. coniferous reproduction:										
Standards and poles.....	11,980	25.6	1,040	3.1	450	1.7	2,270	5.6	4,565	12.8
Saplings.....			140		1,478				14,755	
5. Poplar-Birch, without coniferous reproduction:										
Standards and poles.....					1,682				235	
Saplings.....			140	0.5	3,160	10.1			14,990	41.8
III. BARRENS.....										
Land area investigated.....	14,485	30.9	6,030	18.3	9,722	31.8	14,780	36.2	3,590	10.0
	46,805		32,900	11.8	10,764	35.2			7,135	19.9
					30,566		40,790		35,840	

## ALCONQUIN, GEORGIAN BAY, TRENT, FOREST SURVEY, 1921—CLASSIFICATION OF LANDS.—Continued.

	LAWRENCE		LISTER		LIVINGSTONE		LOUNT		LYNDOCH	
	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
I. CLEARED LAND.....			190	0.4			3,285	7.1	9,664	17.6
II. FOREST:										
1. Hardwood:										
Virgin and moderately culled.....	8,640		7,645		9,295		10,695		2,220	
Severely culled.....							7,310			
Second growth.....									1,180	
Young growth.....										
2. Coniferous:	8,640	19.4	7,645	16.1	9,295	21.3	18,005	38.8	3,400	6.2
Virgin and moderately culled.....	120						200			
Severely culled.....										
Second growth.....			3,390							
Young growth.....										
3. Mixed:	120	0.3	3,390	7.2			200	0.4		
Virgin and moderately culled.....										
Severely culled.....	34,075		5,835		28,330		3,295		25	
Second growth.....			5,435		5,025		7,780			
Young growth.....	1,330		7,650				4,320		11,340	
							155		105	
4. Poplar-Birch, 5 to 20 per cent. coniferous reproduction:	35,405	79.5	18,920	40.1	33,355	77.5	15,550	33.5	11,470	20.9
Standards and poles.....									1,500	
Saplings.....									8,745	
5. Poplar-Birch, without coniferous reproduction:									10,245	18.6
Standards and poles.....			15,825				1,960			
Saplings.....			1,330		450		5,945		5,855	
III. BARRENS.....										
Land area investigated.....	360	0.8	16,155	36.2	450	1.0	7,905	17.0	5,855	10.6
					80	0.2	1,465	3.2	14,335	26.1
	44,525		47,300		43,180		46,410		54,969	

	LYELL		McCLINTOCK		McCONKEY		McCRANEY		Mc KAY	
	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
I. CLEARED LAND.....	1,566	3.6	240	0.6	1,495	3.0				
II. FOREST:										
1. Hardwood:										
Virgin and moderately culled.....	10,322		31,865		150		39,835			
Severely culled.....	1,808						1,260			
Second growth.....	590									
Young growth.....	1,638								1,838	
2. Coniferous:	14,358	33.0	31,865	73.0	150	0.3	41,095	88.2	1,838	6.9
Virgin and moderately culled.....					740					
Severely culled.....			130				270			
Second growth.....										
Young growth.....										
3. Mixed:			130	0.3	740	1.5	270	0.6		
Virgin and moderately culled.....										
Severely culled.....	2,240		4,850		18,990		780			
Second growth.....			300		6,320		2,545			
Young growth.....	222				14,730		670		3,120	
			100						1,280	
4. Poplar-Birch, 5 to 20 per cent. coniferous reproduction:	2,462	5.7	5,250	12.0	40,040	79.5	3,995	8.6	4,400	16.4
Standards and poles.....										
Saplings.....	216				4,550				2,530	
5. Poplar-Birch, without coniferous reproduction:	216	0.5			4,550	9.1			2,530	9.5
Standards and poles.....			170							
Saplings.....	3,006		5,990		1,800				17,946	
III. Barrens.....	3,006	6.9	6,160	14.1	1,800	3.6			17,946	67.2
	21,906	50.3			1,525	3.0			1,240	2.6
Land area investigated.....	43,514		43,645		50,300		46,600		26,714	

ALGONQUIN, GEORGIAN BAY, TRENT, FOREST SURVEY, 1921—CLASSIFICATION OF LANDS.—Continued.

	McKELLAR		McKENZIE		McLAUGHLIN		MACHAR		MARIA	
	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
I. CLEARED LAND.....	7,800	17.3	2,280	5.1	30	0.0	2,140	15.5	595	0.9
II. FOREST:										
1. Hardwood:										
Virgin and moderately culled.....					7,025		3,115		350	
Severely culled.....			570				4,180			
Second growth.....	1,410		625							
Young growth.....			....				1,825			
2. Coniferous:	1,410	3.1	1,195	2.7	7,025	16.1	9,120	65.9	350	0.5
Virgin and moderately culled.....					680				1,545	
Severely culled.....							235		140	
Second growth.....	200								2,955	
Young growth.....	225									
3. Mixed:	425	0.9			680	1.6	235	1.7	4,640	6.8
Virgin and moderately culled.....										
Severely culled.....	6,540		12,550		19,595		255			
Second growth.....	4,950		6,455				1,100			
Young growth.....	10,575		915				140		17,525	
4. Poplar-Birch, 5 to 20 per cent. coniferous reproduction:	22,065	49.0	19,920	45.0	19,595	45.2	1,495	10.8	17,880	26.5
Standards and poles.....									24,645	
Saplings.....	5,680								9,200	
5. Poplar-Birch without coniferous reproduction:	5,680	12.6							33,845	50.2
Standards and poles.....									2,155	
Saplings.....	7,700		2,210				770		7,650	
III. BARRENS.....	7,700	17.1	2,210	5.0						
Land area investigated.....	45,080		18,735	42.2	16,170	37.1	770	5.6	9,805	14.5
			44,340		43,500		60	0.5	375	0.6
							13,820		67,490	



## ALCONQUIN, GEORGIAN BAY, TRENT, FOREST SURVEY, 1921—CLASSIFICATION OF LANDS.—Continued.

	MASTER		MCLEAN		MATAWATCHAN		MILLS		MONTEITH	
	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
I. CLEARED LAND.....			580	7.6	7,190	16.2	4,530	9.9	440	3.3
II. FOREST:	1,540		2,410		1,410					
1. Hardwood:					5,160					
Virgin and moderately culled.....					360					
Severely culled.....										
Second growth.....										
Young growth.....										
2. Coniferous:	1,540	2.8	2,410	31.6	6,930	15.6				
Virgin and moderately culled.....										
Severely culled.....										
Second growth.....	400				1,000					
Young growth.....										
3. Mixed:	400	0.7			1,000	2.3				
Virgin and moderately culled.....	1,550				830		13,980			
Severely culled.....	1,000						13,670			
Second growth.....	4,725				13,775		220		6,530	
Young growth.....	490									
4. Poplar-Birch, 5 to 20 per cent. coniferous reproduction:	7,765	13.8			14,605	33.0	27,870	60.7	6,530	49.3
Standards and poles.....	3 075				6,570					
Saplings.....	1,885				1,910					
5. Poplar-Birch, without coniferous reproduction:	4,960	8.9			8 480	19.1				
Standards and poles.....	14,300						340			
Saplings.....	27,010		4,650		5,925		425		6,280	
III. BARRENS.....	41,310	73.8	4,650	60.8	5,925	13.3	765	1.7	6,280	47.4
Land area investigated.....	55,975		7,640		220	0.5	12,760	27.7		
					44,350		45,925		13,250	

## ALGONQUIN, GEORGIAN BAY, TRENT, FOREST SURVEY, 1921—CLASSIFICATION OF LANDS.—Continued.

	MOWATT		MURCHISON		NIGHTINGALE		NIPissing		NIVEN	
	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
I. CLEARED LAND.....	315	0.5	1,085	2.4	30	0.0	670	4.6		
II. FOREST:										
1. Hardwood:										
Virgin and moderately culled.....	1,795		820		10,235		180			
Severely culled.....	6,430		1,710							
Second growth.....										
Young growth.....										
2. Coniferous:										
Virgin and moderately culled.....	8,225	11.0	2,530	5.5	10,235	25.0	180	1.2		
Severely culled.....	7,020									
Second growth.....	1,380				1,285				950	
Young growth.....										
3. Mixed:										
Virgin and moderately culled.....	8,400	11.2			1,285	3.1			950	1.8
Severely culled.....	3,490		1,760		14,360		1,350		805	
Second growth.....	3,820		3,995							
Young growth.....	17,725		400		1,805				22,375	
					300				530	
4. Poplar-Birch, 5 to 20 per cent. coniferous reproduction:										
Standards and poles.....	25,035	33.4	6,155	13.6	16,465	40.3	1,350	9.4	23,710	45.2
Saplings.....	370		2,985		350				19,095	
	5,590				225				7,840	
5. Poplar-Birch, without coniferous reproduction:										
Standards and poles.....	5,960	7.9	2,985	6.6	575	1.4			26,935	51.4
Saplings.....	11,815		12,300				12,220		500	
III. BARRENS.....										
	11,815	15.8	12,300	27.1			12,220	84.8	500	1.0
	15,135	20.2	20,325	44.8	12,385	30.2			310	0.6
Land area investigated.....	74,885		45,380		40,975		14,420		52,405	

## ALGONQUIN, GEORGIAN BAY, TRENT, FOREST SURVEY, 1921—CLASSIFICATION OF LANDS.—Continued.

	OAKLEY		OSLER		PAPINEAU		PATTERSON		PAXTON	
	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
I. CLEARED LAND.....	1,415	4.4			6,300	12.7	4,250	6.4		
II. FOREST:	23,295		4,660				6,815		16,600	
1. Hardwood:							1,630		350	
Virgin and moderately culled.....										
Severely culled.....										
Second growth.....										
Young growth.....										
2. Coniferous:	23,295	72.4	4,660	10.0			8,445	12.7	16,950	35.0
Virgin and moderately culled.....										
Severely culled.....							2,265			
Second growth.....			945		780		250		1,205	
Young growth.....							300			
3. Mixed:	795		945	2.0	780	1.6	2,815	4.2	1,205	2.5
Virgin and moderately culled.....										
Severely culled.....			8,030				7,105		4,405	
Second growth.....			6,375		135		2,005		19,935	
Young growth.....	1,170		12,550		4,635		8,985		185	
			690		1,140					
4. Poplar-Birch, 5 to 20 per cent. coniferous reproduction:	1,965	6.1	27,645	59.1	5,910	11.9	18,095	27.0	24,525	50.7
Standards and poles.....			2,735		3,105					
Saplings.....					11,775		4,250			
5. Poplar-Birch, without coniferous reproduction:			2,735	5.8	14,880	30.0	4,250	6.4		
Standards and poles.....			10,150		105				145	
Saplings.....	5,520		665		18,020		22,480		5,560	
III. BARRENS.....	5,520	17.1	10,815	23.1	18,125	36.6	22,480	33.7	5,705	11.8
Land area investigated.....	32,195		46,800		3,550	7.2	6,405	9.6		
					49,545		66,740		48,385	

ALGONQUIN, GEORGIAN BAY, TRENT, FOREST SURVEY, 1921—CLASSIFICATION OF LANDS.—Continued

	PECK		PENTLAND		PETAUAWA		PRESTON		PRINGLE	
	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
I. CLEARED LAND.					11,050	51.1	105	0.2	5,065	10.6
II. FOREST:										
1. Hardwood:										
Virgin and moderately culled.	10,930		15,715		135		1,965		2,780	
Severely culled.									5,215	
Second growth.										
Young growth.										
2. Coniferous:										
Virgin and moderately culled.	10,930	25.4	15,715	29.0	135	0.6	1,965	4.2	7,995	16.7
Severely culled.			80				7,295			
Second growth.			690		2,050		185			
Young growth.							270		65	
3. Mixed:										
Virgin and moderately culled.			770	1.4	2,050	9.5	7,750	16.6	65	0.1
Severely culled.	27,830		23,275				18,320		21,275	
Second growth.	440		830				5,565		4,010	
Young growth.			2,720				4,055		1,620	
			385		1,245					
4. Poplar-Birch, 5 to 20 per cent. coniferous reproduction:	28,270	66.0	27,210	50.3	1,245	5.8	27,940	60.0	26,905	56.1
Standards and poles.			190				375		165	
Saplings.										
5. Poplar-Birch, without coniferous reproduction:			190	0.4			375	0.8	165	0.4
Standards and poles.	3,665		3,005		7,125				2,810	
Saplings.			7,215				1,910		695	
III. Barrens.	3,665	8.6	10,220	18.9	7,125	33.0	1,910	4.1	3,505	7.3
							6,580	14.1	4,285	8.8
Land area investigated.	42,865		54,105		21,605		46,625		47,985	



## ALGONQUIN, GEORGIAN BAY, TRENT, FOREST SURVEY, 1921—CLASSIFICATION OF LANDS.—Continued.

	PROUDFOOT		RADCLIFFE		RAGLAN		RICHARDS		RIDOUT	
	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
I. CLEARED LAND.....	2,640	6.1	6,256	14.7	14,262	21.7	4,500	10.6	295	1.0
II. FOREST:										
I. Hardwood:										
Virgin and moderately culled.....	3,170		3,505		6,486				16,560	
Severely culled.....	5,575		114						1,890	
Second growth.....	6,065		1,275		1,254					
Young growth.....			1,120							
II. Coniferous:										
Virgin and moderately culled.....	14,810	34.0	6,014	14.2	7,740	11.8			18,450	64.3
Severely culled.....							2,175			
Second growth.....	470		755				935			
Young growth.....										
III. Mixed:										
Virgin and moderately culled.....	470	1.1	755	1.7			3,110	7.4		
Severely culled.....	14,095		1,910		914				4,730	
Second growth.....	979				1,675		160		80	
Young growth.....	1,635		3,731		18,214		380			
4. Poplar-Birch, 5 to 20 per cent. coniferous reproduction:	16,700	38.4	5,641	13.3	20,803	31.6	540	1.3	4,810	16.0
Standards and poles.....			796		554		365			
Saplings.....			435		10,140		300		90	
5. Poplar-Birch without coniferous reproduction:			1,231	2.9	10,694	16.2	665	1.6	90	0.3
Standards and poles.....	255		2,495							
Saplings.....	8,645		14,225		9,890		26,910		5,015	
III. BARRENS.....	8,900	20.4	16,720	39.4	9,890	15.0	26,910	63.6	5,015	17.3
Land area investigated.....	43,520		5,855	13.8	2,430	3.7	6,545	15.5	25	0.1
			42,472		65,819		42,270		28,685	

## ALGONQUIN, GEORGIAN BAY, TRENT, FOREST SURVEY, 1921—CLASSIFICATION OF LANDS.—Continued.

	ROLPH		SABINE		SEBASTOPOL		SHAWANAGA		SHERBORNE	
	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
I. CLEARED LAND.....	3,930	9.3	880	1.7	12,230	28.8	.....	.....	670	2.4
II. FOREST:										
1. Hardwood:										
Virgin and moderately culled.....			21,600	.....	100	.....			6,460	.....
Severely culled.....	115	.....	17,795	.....	21,430	.....			1,320	.....
Second growth.....	1 140	.....	.....	.....	.....	.....			.....	.....
Young growth.....	.....	.....	3,710	.....	.....	.....			.....	.....
2. Coniferous:	1,255	2.9	43,105	84.5	21,530	50.6	.....	.....	7,780	29.1
Virgin and moderately culled.....	250	.....	.....	.....	.....	.....			.....	.....
Severely culled.....	350	.....	.....	.....	.....	.....			.....	.....
Second growth.....	2,425	.....	50	.....	.....	.....			130	.....
Young growth.....	.....	.....	.....	.....	.....	.....			.....	.....
3. Mixed:	3,025	7.1	50	0.1	.....	.....	.....	.....	130	0.5
Virgin and moderately culled.....	570	.....	70	.....	.....	.....			1,105	.....
Severely culled.....	1,210	.....	1,180	.....	.....	.....	1,190	.....	.....	.....
Second growth.....	9,600	.....	.....	.....	.....	.....	230	.....	160	.....
Young growth.....	.....	.....	.....	.....	1,455	.....	10,230	.....	.....	.....
4. Poplar-Birch, 5 to 20 per cent. coniferous reproduction:	11,380	26.9	1,250	2.5	1 455	3.4	11,650	40.4	1,265	4.7
Standards and poles.....	2,995	.....	.....	.....	.....	.....	.....	.....	.....	.....
Saplings.....	8,220	.....	.....	.....	6,430	.....	8,620	.....	375	.....
5. Poplar-Birch, without coniferous reproduction:	11,215	26.7	.....	.....	6,430	15.1	8,260	29.9	375	1.4
Standards and poles.....	3,130	.....	.....	.....	.....	.....	.....	.....	.....	.....
Saplings.....	7,415	.....	300	.....	865	.....	.....	.....	16,400	.....
III. BARRENS.....	10,545	24.9	300	0.6	865	2.1	.....	.....	16,400	61.9
Land area investigated.....	940	2.2	5,420	10.6	.....	.....	8,510	29.7	.....	.....
	42,290	.....	51,005	.....	42,510	.....	28,780	.....	26,620	.....

## ALGONQUIN, GEORGIAN BAY, TRENT, FOREST SURVEY, 1921—CLASSIFICATION OF LANDS.—Continued.

	SHERWOOD		SINCLAIR		SPOULE		STRATTON		WALLBRIDGE	
	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
I. CLEARED LAND.....	9,488	20.8	70	0.8					730	1.1
II. FOREST:										
1. Hardwood:										
Virgin and moderately culled.....										
Severely culled.....	650		7,780		1,100		1,725		360	
Second growth.....	92		740							
Young growth.....										
2. Coniferous:	742	1.6	8,520	92.4	1,100	2.5	1,725	2.9	360	0.5
Virgin and moderately culled.....					1,590					
Severely culled.....					415		6,545		4,250	
Second growth.....									400	
Young growth.....					2,005	4.5	6,545	11.0	4,650	6.7
3. Mixed:					17,730					
Virgin and moderately culled.....	132									
Severely culled.....	1,892		630		1,550		16,990			
Second growth.....							4,220		24,445	
Young growth.....										
4. Poplar-Birch, 5 to 20 per cent. coniferous reproduction:	2,024	4.5	630	6.8	19,280	42.8	21,210	35.7	24,445	35.5
Standards and poles.....	1,774				155		16,280		1,300	
Saplings.....	710									
5. Poplar-Birch, without coniferous reproduction:	2,484	5.5			155	0.3	16,280	27.4	1,300	1.9
Standards and poles.....	6,212				700		5,210			
Saplings.....	22,614						8,470		3,240	
III. BARRENS.....	28,826	63.3			700		13,680	23.0	3,240	4.7
Land area investigated.....	1,948	4.3			21,755	48.4			34,125	49.6
	45,512		9,220		44,995		59,440		68,850	

## ALCONQUIN, GEORGIAN BAY, TRENT, FOREST SURVEY, 1921—CLASSIFICATION OF LANDS.—Continued.

	WHITE		WILBER-FORCE		WILKES		WILSON		WYLIE		WOOD	
	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
I. CLEARED LAND.....			30,665	50.4	55	0.1	1,570	3.8	2,660	11.3	525	1.0
II. FOREST:												
1. Hardwood:												
Virgin and moderately culled.....			250		8,260		205					
Severely culled.....					240							
Second growth.....	350								275		60	
Young growth.....												
2. Coniferous:												
Virgin and moderately culled.....	350	0.7	250	0.4	8,500	19.9	205	0.5	275	1.2	60	0.1
Severely culled.....					475							
Second growth.....	7,455		2,085		190							
Young growth.....	845		160		1,710				3,465		210	
3. Mixed:												
Virgin and moderately culled.....	8,300	16.0	2,245	3.7	2,375	5.6			3,465	14.7	210	0.4
Severely culled.....			190		24,860		9,115		170		275	
Second growth.....			6,750		1,110		6,625					
Young growth.....	24,650		3,370		5,045		200		4,040		10,035	
4. Poplar-Birch, 5 to 20 per cent. coniferous reproduction:												
Standards and poles.....	24,650	47.7	23,740	39.0	31,015	72.7	18,270	43.7	4,210	17.9	10,310	20.5
Saplings.....	3,630		220		120				2,860		750	
5. Poplar-Birch, without coniferous reproduction:												
Standards and poles.....	14,170	27.4	220	0.4	120	0.3			4,210	17.9	4,650	9.2
Saplings.....	225		1,230		120				2,465		640	
III. BARRENS.....												
Land area investigated.....	4,030		2,500		480				5,280		32,295	
	4,255	8.2	3,730	6.1	600	1.4			7,745	32.9	32,935	65.4
									970	4.1	1,690	3.4
	51,725		60,850		42,665		41,755		23,535		50,380	



## ALCONQUIN, GEORGIAN BAY TRENT, FOREST SURVEY, 1920--1921--CLASSIFICATION OF LANDS BY DISTRICTS.

	ALCONQUIN PARK		OTTAWA VALLEY		RENFREW		MADAWASKA 1920--21	
	Acres	%	Acres	%	Acres	%	Acres	%
I. CLEARED LAND.....	1,065	0.6	85,625	11.2	150,522	20.9	398,002	18.1
II. FOREST:								
1. Hardwood:								
Virgin and moderately culled.....	309,090	17.0	25,180	3.3	41,742	5.8	162,729	7.4
Severely culled.....	8,200	0.5	13,610	1.8	34,768	4.8	104,988	4.8
Second growth.....	3,620	0.2	6,905	0.9	1,220	0.2	61,203	2.8
Young growth.....	490	.....	2,735	0.4	7,296	1.0	46,613	2.1
2. Coniferous:								
Virgin and moderately culled.....	321,400	17.7	48,430	6.4	85,026	11.8	375,533	17.1
Severely culled.....	15,953	0.9	1,795	0.2	2,681	0.4	9,166	0.4
Second growth.....	59,220	3.4	21,715	2.9	9,494	1.3	20,800	0.9
Young growth.....	2,625	0.1	3,800	0.5	922	0.1	12,304	0.6
3. Mixed:							615	.....
Virgin and moderately culled.....	80,828	4.6	29,440	3.9	13,842	1.9	42,885	1.9
Severely culled.....	460,205	26.1	8,030	1.1	19,798	2.8	78,515	3.6
Second growth.....	97,490	5.5	13,405	1.8	18,032	2.5	55,178	2.5
Young growth.....	323,464	18.3	92,805	12.2	36,216	5.0	176,265	8.0
	12,145	0.7	7,855	1.0	18,991	2.7	5,409	0.3
4. Poplar-Birch, 5 to 20 per cent. coniferous reproduction: Standards and poles.....	893,304	50.6	122,095	16.1	93,037	13.0	315,367	14.4
Saplings.....	160,475	9.2	111,495	14.6	22,883	3.2	84,035	3.8
	39,785	2.3	84,950	11.1	10,154	1.4	418,846	19.1
5. Poplar-Birch, without coniferous reproduction: Standards and poles.....	200,260	11.5	196,445	25.7	33,037	4.6	502,881	22.9
Saplings.....	70,210	4.0	27,005	3.5	24,678	3.4	15,049	0.7
	91,605	5.1	175,195	23.0	195,098	27.1	368,192	16.7
III. Barrens.....	161,815	9.1	202,200	26.5	219,776	30.5	383,241	17.4
	103,155	5.9	77,660	10.2	125,576	17.3	180,201	8.2
Land area investigated.....	1,761,827	.....	761,895	.....	720,816	.....	2,198,110	.....

ALGONQUIN, GEORGIAN BAY, TRENT, FOREST SURVEY, 1920-1921—CLASSIFICATION OF LANDS BY DISTRICTS.—*Concluded.*

	MUSKOKA		PARRY SOUND		GEORGIAN BAY		TOTALS	
	Acres	%	Acres	%	Acres	%	Acres	%
I. CLEARED LAND.....	3 630	2.5	66,505	7.3	7,640	1.1	712,989	9.9 (79.2)
II. FOREST:								
1. Hardwood:								
Virgin and moderately culled.....	66,595	45.5	67,385	7.3	6,655	0.9	679,376	9.4 (11.9)
Severely culled.....	3,950	2.7	68,345	7.4	14,705	2.1	248,566	3.4 (4.3)
Second growth.....			26,660	2.9	5,095	0.7	104,703	1.5 (1.8)
Young growth.....			7,640	0.8			64,774	0.9 (1.1)
2. Coniferous:								
Virgin and moderately culled.....	70,545	48.2	170,030	18.4	26,455	3.7	1,097,419	15.2 (19.1)
Severely culled.....			15,035	1.6	7,020	1.0	51,650	0.7 (0.9)
Second growth.....	130	0.1	560	0.1	170		27,435	0.4 (0.5)
Young growth.....			8,315	0.9	7,305	1.1	118,483	1.6 (2.1)
			515	0.1	890	0.1	9,367	0.1 (0.2)
3. Mixed:								
Virgin and moderately culled.....	130	0.1	24,425	2.7	15,385	2.2	206,935	2.8 (3.7)
Severely culled.....	26,970	18.4	162,425	17.7	20,570	2.9	776,513	10.8 (13.6)
Second growth.....	80	0.1	103,800	11.3	42,580	6.0	330,565	4.6 (5.8)
Young growth.....	1,960	1.3	112,100	12.2	100,560	14.2	843,370	11.7 (14.8)
			3,720	0.4	88,035	12.5	136,155	1.9 (2.4)
4. Poplar-Birch, 5 to 20 per cent. coniferous reproduction:	29,010	19.8	382,045	41.6	251,745	35.6	2,086,603	29.0 (36.6)
Standards and poles.....			4,715	0.5	2,635	0.4	386,238	5.4 (6.8)
Saplings.....	465	0.3	16,415	1.8	79,854	11.3	650,469	9.0 (11.4)
5. Poplar-Birch without coniferous reproduction:	465	0.3	21,130	2.3	82,489	11.7	1,036,707	14.4 (18.2)
Standards and poles.....			5,735	0.6	640	0.1	143,317	2.0 (2.5)
Saplings.....	42,635	29.1	140,935	15.4	125,650	17.8	1,139,310	15.8 (19.9)
III. BARRENS.....	42,635	29.1	146,770	16.0	126,290	17.9	1,282,627	17.8 (22.4)
	25		107,125	11.7	196,350	27.8	790,092	10.9
Land area investigated.....	146,440		917,930		706,354		7,213,372	

(Percentage figures in parentheses denote the participation of each forest type in the total forest area.)

**AERIAL FOREST SURVEY.**—The survey covered by the following report was undertaken by the Ontario Forestry Branch in co-operation with the Canadian Air Board for the purpose of determining the possibility of using air craft in connection with forest field work, and was carried on from Sioux Look-out, a western divisional point on the north line of the C.N.R. (G.T.P.), from March to October of the current year. During this time approximately 10,000 square miles was worked over, comprising in general the territory lying between the G.T.P. railway and the Lake St. Joseph - Lac Seul - English River waterway, from the Manitoba boundary east to the foot of Lake St. Joseph.

1. *Personnel.*—One station superintendent and pilot, two pilots, one chief mechanic, one storesman, one photographer, two engine fitters, one rigger, one boat builder, one clerk-stenographer, one cook and one cookie, furnished by the Air Board. The Forestry Branch observers were one forester and one student assistant.

2. *Equipment.*—One F.3. Flying Boat, two H.S.2.L. Flying Boats, one small motor boat, one row boat, four box cars (used for photographic dark room and store room, sleeping quarters, office, cookhouse and storage), technical stores and photographic equipment including two wind motors, two vertical aerial cameras (Kodak Company Type K.1.), one oblique camera, and one ground camera; compasses, chains, calipers, etc., and general office equipment.

3. *Characteristics of Machines.*—Some details of the more important characteristics of the types of air craft used, is perhaps necessary at this point for a correct comprehension of operating conditions.

The F.3. Flying Boat is a very large British machine, measuring over one hundred feet along the leading edge of the top plane; is capable of carrying up to a dozen men, and can fly for over six hours without refueling. Air speed is from seventy to eighty knots (80 to 90 miles per hour) and time to reach five thousand feet about thirty minutes. Although the splendid visibility from the observer's cockpit and the machine's ability to remain in the air for such a long time, were both points in favor of its use for the summer's work, such advantages in the air were more than offset by the difficulty of manoeuvring on the comparatively small lakes of the district. The machine was, therefore, the opportunity arising, exchanged for a third H.S.2.L. with the Victoria Beach (Lake Winnipeg) Air Station.

The H.S.2.L. is a Flying Boat of American design, considerably smaller than the F.3., seventy feet across the leading edge of the top plane; is capable of carrying up to five men, and of flying for about three and one-half hours without refueling. Air speed is between fifty-five and sixty-five knots (60 to 70 miles per hour), with time to climb three thousand feet about forty-five minutes. It will thus be seen that the H.S.2.L. has not as good a performance as that of the larger F.3. It has, however, advantages. Visibility from the observer's cockpit is better, and as it has only one engine and the F.3. requires two for sustained flight, the chances of trouble from this source are practically halved. But it is on the water, and not in flight, that the H.S.2.L.'s peculiar advantages become apparent. Here the machine is comparatively easy to manoeuvre, and because of its sturdy construction—which is, no doubt, largely responsible for its poor performance—can venture landings on unknown beaches and, in general, withstand, much better than a more finely built machine, the accidental ill-treatment which inevitably occurs under field conditions.

4. *Working Conditions.*—Weather, the lack of local arrangements in connection with the establishment of an Air Station and finally the erecting,

launching and testing the machines did not permit of regular flying until late in May. From the outset, as had been confidently expected, it was apparent that, largely because of the simple composition of the forest in this latitude, type mapping could be carried on without further experience, in so far as the separation of timber species and barren areas was concerned. These first flights served also to show, what was amply borne out by subsequent experience, that the country presented a very excellent flying chance, being liberally sprinkled with fairly large and well-connected lakes and free from any great land elevations. Thus, the limitations of low performance were largely offset, making it possible to fly with confidence and safety literally anywhere; and it should be borne in mind that the successful operation of low performance machines cannot be counted on without such favorable conditions. Flying and forest conditions having thus been found suitable, and as the separation of timber types and non-commercial areas was all the information required over a large area, typing on this basis was commenced about June 4, and carried on during the remainder of June and July. Weather conditions were ideal for flying, so that by August 2, the mapping of some fifty thousand square miles was completed to show the following types:

- (1) Coniferous stands, 75 per cent. of better coniferous species;
- (2) Mixed stands, less than 75 per cent. hardwood;
- (3) Burned-over areas partially restocking.

5. *Mapping Methods.*—The system of mapping outlined below, was also developed during this period, and was used throughout the season.

The region being entirely unsurveyed—it might be said unexplored, if the main canoe routes of the Hudson Bay Company were excluded—township sheets for field sketching were not available, and it became necessary to prepare field sheets. This was done by plotting the information recorded on the eight mile to the inch Dominion Standard Topography Sheet for the region, to a suitable scale, the scale finally adopted being one inch to the mile. Field sheets, prepared as above, were attached to a drawing board and taken into the air. Here, just as in ground work, the chief consideration in mapping is to locate and orient the map. On the ground, by recognized survey methods, this can be done either by scaling off a known distance on the line being run and orienting by compass and back sight, or by orienting and intersecting for position on points whose location is already known. In the air, location, in the past season's operations and under aerial conditions generally, cannot be had by the use of the most orthodox ground method, i.e., traveling on a line whose length and direction are known. It should not be inferred from this that aerial navigation is discredited, but it requires the constant attention of a skilled navigator, besides the pilot, supplied with an assortment of complicated instruments. Moreover, calculations are necessary, even with the fullest instrumental equipment at present available; and the delay thus entailed, however small, is a distinct drawback in aerial sketch work. On the other hand, because of the greater number of such features, which can be seen at one and the same time, position by reference to known physiographic features can be obtained in flight more rapidly, accurately and easily than in the great majority of cases on the ground. On the same basis and for similar reasons, type lines can also be drawn in flight at a distinct advantage. In consideration of the foregoing, mapping, during the past season, was carried on almost exclusively by reference.



6. *Results.*—The mapping of the area mentioned above, which had been originally considered a season's work, having been completed in less time than expected (August 2), and the method and results having proved so satisfactory, plans were made for an extension of the survey. It was decided not only to continue typing of the adjoining territory, but also to attempt a classification of the three composition types into age or size classes.

By October 12, when weather conditions stopped field work, an additional area of almost equal size, bringing a total for the season up to approximately 10,000 square miles, was mapped to show in the three composition types, mentioned above, four size classes, viz.:

- (1) Mature stands, at least 75 per cent. of trees of commercial size.
- (2) Pole wood stands, not over twenty-five per cent. of commercial size.
- (3) Sapling growth, no trees of commercial size.
- (4) Reproduction, not over 3 feet in height.

This was worked out by landings to relate the appearance from the air to the actual condition of the stand as determined by ground work. Wherever possible, during such landings, sample plots of the types were laid out and measurements recorded. Results in this connection were extremely gratifying, and in twenty-one landings, a total for the season, including thirteen where sample plots were taken, no single case occurred in which the aerial classification differed materially from conditions as actually found on the ground.

The 10,000 square miles (6,400,000 acres) mapped, showed the forest condition as a whole to be approximately one-quarter of the coniferous type, one-third of the mixed type, and the remainder a burned-over type more or less restocking.

The coniferous type was defined as 75 per cent. or better coniferous, the species being white and black spruce, jack pine and balsam. The mixed type consisted of these species with poplar and birch. The original attempt to differentiate poplar-birch stands, as a separate type, proved not feasible. The burned-over type included only those areas where the second growth is mainly still below commercial size; it was estimated that three-quarters of such areas are restocking in some degree.

While opportunities for ground study were very limited, as can be seen by the small number of sample plots below, a few general remarks may be of interest.

The species composition, throughout the whole area covered, is very simple. Jack pine, black and white spruce, balsam, birch and poplar make up over ninety per cent. of the tree growth. White cedar occurs frequently in a dwarfed condition along the lake and river margins. Red maple, American elm, and black ash occurred occasionally. The proportion of white and red pine is very much less than the favorite method of travel in the country—that is, by water—would indicate. South of the G.T.P., red and white pine occur very frequently on lake and river margins, and from the main line of the C.P.R. become rapidly prominent, until at the international boundary, they are found interspersed with birch and poplar in extensive stands and splendid development. North of the G.T.P. (the region to which this survey relates) however, they rapidly disappear, even on small islands and lake shores; and the most northerly point at which white pine was noted, is not far from Sioux Lookout, on the English River, above Lac Seul. It is, however, highly probable that scattered bluffs and fringes would be found on the more southerly portions of

this lake, although a landing on the north-east shore showed no signs of the species, either on the shore or islands. Red pine is known to occur somewhat farther north, a bluff of perhaps five acres being noted at the head waters of the Albany drainage, on a sandy slope between Upper and Middle Green Grass Lakes. Unlike a species approaching its climatic limit, these northerly specimens of both white and red pine retain to a very marked degree, the vigorous appearance of their race and indeed appear to be much less affected by adverse climatic conditions than the other regional species. The above circumstances and the occurrence of these trees in isolated clumps, lend color to the tradition which is common among the lumbermen and early settlers of this region, that their commercial range at one time extended much further north—indeed, to Hudson Bay—and that the present distribution is due to a widespread fire or series of fires occurring from fifty to one hundred and fifty years ago. That fire would wholly consume every trace of such a forest over such an area seems improbable. Whatever the composition of the forest may have been in former times however, it would appear that the present species composition, if undisturbed, will, within a single generation of trees, show a tremendous increase in the percentage of balsam fir. Everywhere, on all sites and under dominant stands of every species, one is impressed by the prevalence and thrifty growth of balsam reproduction, which often forms a complete waist or knee-high canopy, almost totally weeding out rival reproduction and even undergrowth.

There is in this northern forest ample evidence of the severity of the climate. Mature stands of white spruce, which is the largest timber tree in the region, are almost invariably filled with the trunks and debris of wind-thrown specimens. This is believed to be due however, not so directly to the severe wind storms of the region, as to the weakening of trunks due to a very widespread condition of heartrot. In this connection, one may record that frost crack is extremely common. While such destruction is perhaps most easily seen in the case of mature white spruce, it is also to be found in mature stands of all the timber species; more particularly in the northern part of the region covered. Under such conditions, stands below maturity, produce far more and more valuable timber.

It is believed, too, that the effects of climate can be seen in the behaviour of the reproduction, more particularly as Lake St. Joseph is approached. Areas in this region, when burned over, very frequently pass through a somewhat different cycle than that obtaining for similar sites under more favorable climatic conditions. South of Lake Nippissing, for example, such sites are within three or four years, completely covered with a growth of tree seedlings typically poplar and birch. Here, however, although sites and chances of seeding, etc., seemed at least to be equally favorable, such areas very frequently were found with willow, alder, and other shrubby growths among which reproduction of tree species was sparsely interspersed.

7. *Aerial Photography*.—As aerial photography is a highly specialized process requiring definite equipment for definite objects, it could only be used experimentally during the past season. With this in view, some twenty-two hundred vertical and three hundred oblique exposures were made.

As pictures, oblique aerial exposures are, perhaps, more interesting and, at first sight, more instructive than verticals, being readily comparable to ground views from high buildings and land elevations. As the camera producing them is a fairly simple instrument, they are also easier to obtain. Such

pictures are valuable as permanent records of important aerial observations and as a substitute for lengthy descriptions of forest conditions. For mapping purposes, however, they are of little use.

Vertical pictures, on the other hand, while they are not artistic or interesting at first sight as pictures, can be used for mapping and type classifying. The cameras making such exposures are, however, delicate and complicated instruments. In operation, they are fixed to the machine, and can be made to produce, either automatically or by a simple operation, exposures at such a rate that each succeeding exposure will cover a certain proportion (greater or less as desired) of the territory covered by the exposure preceding it. By thus including a part of one picture in another—or “overlapping”—it becomes possible to “join” one to another and build up a composite picture containing any number of single exposures. The accurate joining of two pictures of this kind is not, however, as simple a matter as might be supposed from the foregoing, which takes no account of the motion of the machine during exposure. Such motion, the effects of which must be corrected by dark room work and which might be compared to that of a ship—sometimes slowly rising and falling, as if riding on the long, gentle swell of an aerial ocean; sometimes rolled sharply from side to side or pitched fore and aft—continually and unavoidably violates the requirements for exact similarity in the scale of overlapping pictures—namely, that exposure be made at exactly the same height and with fore and aft and lateral axis either level or at the same degree of departure from level. While the differences arising from the above causes are usually small in each separate case, the total effect over a series of hundreds of pictures may produce great inaccuracy. Nor is the motion of the machine the only element affecting the accuracy of aerial photographic survey, for even in perfectly built up strips, where point has been made to correspond with point exactly in the overlap, there is still the error due to the natural differences in ground elevation. Unfortunately, such errors require for their correction, besides laboratory work, a certain amount of ground survey work, which shall be visible in the picture and whose details can be plotted and used as a check. Errors arising from the foregoing however, do not have to be seriously reckoned with in a flat country, and where absolute accuracy is not essential.

Results of this year's work would indicate that satisfactory pictures can be produced which will show sufficient detail to separate types; but it would appear that before this possibility can be utilized to any great extent, it will be necessary to accumulate a photographic reference library of known forest growths as a basis of comparison, and also to devise a satisfactory method of joining the strips of pictures to one another to make a mosaic. Such joining is not a matter of the operation of a mechanical device, as in the joining of successive pictures to make a strip, but is dependent on the ability of the pilot to fly his machine along evenly spaced parallel courses, so as to cause the long edges of the strips to join—a very different and more difficult undertaking. Corrections for differences in ground elevation and motion of the machine must be made in this connection, just as with the sections of each strip.

Despite the difficulties outlined above, the use of aerial photography for mapping would appear to be an almost certain development in survey work. Its ability to reproduce detail is unlimited: it can also produce results rapidly and with a degree of completeness, the value of which can hardly be appreciated without experience.

8. *Fire Patrol.*—Detection of forest fires was carried on during the fire



season in connection with the regular survey work, location being reported on return to the base, to the local rangers or by wire to the district chief. From the season's flying experience, it would appear that aerial detection of fire is both more reliable and more efficient than any other system as yet devised. On the score of reliability, records of the field unit of three machines, with which the past season's work was carried on, show that it would have been possible throughout the season to provide a daily patrol of at least one machine capable of covering a two hundred mile beat. This is the more creditable when it is considered that flight was continued without engine overhaul up to, in the case of one, and far past in the case of the other two machines, the time limit for the engines prescribed by the makers. Chances of uncertain service, such as the above and the numerous other ways, need not be incurred, in the case of machines operating from a permanent base, with an almost certain gain in dependability.

As regards the efficiency of the aerial observer to spot fire, it is believed that this is entirely a question of personnel. Fires can be seen clearly and for great distances. They can be seen despite ground-haze, which from above is scarcely perceptible, and can be located by anyone provided with, and capable of reading, a good map. In addition to merely observing and locating fire, however, the aerial observer can also, and should be required, to report on its size and situation with respect to local fire barriers and progress during fighting—information which cannot be supplied by any other system of detection, except by great good fortune, and which is of immense value to the proper planning of fire fighting operations.

Suppression, which is at once the essential and most difficult part of any fire protection system, was successfully carried out by the use of air craft on two occasions. In one instance, this entailed the transportation and supplying of a total of six men for a distance of seventy-five miles by air; fire fighting was carried on for eight days. The second fire occurred forty miles from the base and was fought by four men taken in and supplied by air; for four days. Although opportunity for further work of this kind was abundant and could readily have been undertaken, it was considered inadvisable to do so in view of the fact that the unit was not organized for such work and that it would interfere too much with the regular survey work. The above results should indicate, however, that aerial transportation can be used for fire suppression.

The importance of aerial transportation, and the extent to which it could be used for forest fire suppression in this Province can only be grasped after a consideration of the large number of suitable ready-made landing grounds for sea-planes and flying boats which are scattered throughout almost the whole fire district; and the further consideration that successful development along this line would immediately place such points in the same category as road and railway heads, from which it would be possible to obtain men and supplies at short notice in case of any emergency.

9. *Summary.*—(a) Approximately 6,400,000 acres, lying in general between the G.T.P. Railway and the Albany - Lac Seul waterway, were mapped as composition types by sketch; about one-half of this was further classified into size classes.

Some 325,000 acres, in scattered strips, were covered by aerial photography.

Twenty-one special landings were made for sample plot work in typical forest stands.

Throughout the season forest fire detection was carried on, secondarily to



the survey work. Fighting was carried out in two instances, to explore the possibilities in this line.

(b) This survey was carried on in co-operation with the Canadian Air Board, who supplied three H.S.2L. flying boats with the necessary personnel and equipment; with R. N. Johnston of this Branch, and forestry student assistant F. T. Jenkins, as observers.

(c) The total flying time for the season was 333 hours; the cost, \$140.00 per flying hour, and two-thirds cents per acre.

10. *Conclusions.*—It is believed that a proper attitude towards the following conclusions from the season's work is one which regards it as essentially experimental.

The H.S.2L. type of craft was serviceable because of the physiography of the region. A territory less liberally studded with lakes would require a machine of proportionately greater speed and climb. Some fitting-up is necessary for the working convenience and comfort of the observer.

The observer is called upon for rapid recognition and classification of types, according to recognized ground standards, and rapid mapping of boundaries. This requires special aptitude as training by flying is expensive.

Required ground studies should be done by separate crews.

Aerial photography is specialized work and should be attempted on a large scale only by units organized for that purpose. It requires, for best operation, flying equipment capable of high speed and climb, in order to take full advantage of good photographic light and to be able to operate at a height where aerial disturbances producing errors in exposure, are at a minimum. Cameras should be chosen with regard to the class of work required and the machine in which they are to be used. In survey work, the exposures should be finished and at least roughly plotted in the field, to prevent possible serious lack of data through some failure in field operations.

Fire detection can be carried on with either high or low performance machines, both reliably and efficiently. The matter of suppression is dependent for success on the opportunities for landing. These uses of the air craft being secondary, no estimate of cost can be given.

Operation cost of flying, being slight as compared to overhead, the season's program of work should make provision for the utilization of all possible flying time and not merely perfect flying weather.

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In conclusion, it is desired to make reference to the splendid work of the personnel of the Air Board, and more particularly to the mechanics. No inference that their work was more worthy of mention than that of any other section of Air Board personnel is intended here, for this would be entirely untrue, but it is a fact that the work of the mechanic is usually overlooked. Nearly everyone is fully aware that a machine must have a pilot to fly, but how many have more than a dim realization of the absolute dependence of flight on the faithful, hard, and often unpleasant, work of the mechanic?

Of the hearty co-operation of the whole unit, however, enough cannot be said. Indeed, this was true to such an extent that work was carried on as if not two but one, and that a forest organization, was involved. This is the more remarkable when it is remembered that the foresters, through lack of data and experience, could not act with certainty from day to day, but had of neces-

sity to chop and change as experience and opportunity indicated. Such changes, discouraging in any case, must have been much more so when made, as they frequently were, for what, to an outsider, must have appeared as trivial or obscure reasons.

### III. REFORESTATION.

#### *Provincial Forestry Station, St. Williams:*

The broadening-out policy, in preparation for the many reforestation projects which are facing the Government, has been emphasized during the year at St. Williams. A description of the work done is as follows:

*Seed Beds.*—Spring sowing of seed beds commenced April 5th and continued until June 9th. In all, 605 beds, each 30 feet long by 4 feet wide, were sown, the amount of seed used being  $591\frac{1}{4}$  pounds of all species. Fall sowing of seed beds commenced November 15th and continued until December 10th. 340 beds of the same size were sown, requiring  $395\frac{5}{8}$  pounds of seed.

#### SPRING SOWING.

SPECIES.	No. of Beds Sown.	Amount Seed per Bed. Ozs.	Total Amount Seed. Lbs.
White Pine.....	180	24	270
Scotch Pine.....	80	11	55
Jack Pine.....	75	12	$56\frac{1}{2}$
Austrian Pine.....	5	28	$8\frac{3}{4}$
White Spruce.....	180	12	135
Norway Spruce.....	5	20	$6\frac{1}{4}$
White Cedar.....	80	12	60
TOTALS.....	605		$591\frac{1}{4}$

#### FALL SOWING.

SPECIES.	No. of Beds Sown.	Amount Seed per Bed. Ozs.	Total Amount Seed. Lbs.
White Pine.....	75	34	150
Scotch Pine.....	10	12	$7\frac{1}{2}$
Red Pine.....	210	12	$157\frac{1}{2}$
Jack Pine.....	5	10	3 1-8
White Spruce.....	35	24	$52\frac{1}{2}$
Basswood.....	5	5	25
TOTALS.....	340		395 5-8

Besides the sowing of these beds, the following hardwood species were sown in drills: Red Oak, 10 bushels; Black Walnut, 25 bushels; and Sweet Chestnut,  $1\frac{1}{2}$  bushels.

*Nursery Lines.*—During the spring 50,000 one-year-old jack pine seedlings were lined out; also a shipment of 40,000 white spruce and 60,000 Scotch pine, purchased from the Quebec Nursery. During the autumn, 1,000,000 Scotch

pine, which had been sown in the spring seed beds, were transplanted to the nursery lines.

*Fertilizer.*—In connection with the two foregoing operations, fertilizers, as shown hereafter, were used:

LOCATION	ANIMAL.		MINERAL.		
	Manure.	Dried Blood.	Muriate of Potash.	Acid Phosphate.	Sulph. of Ammonia.
	Tons.	Lbs.	Lbs.	Lbs.	Lbs.
Lot 19 .....	40	150	.....	600	105
Lot 20 .....	11	.....	.....	.....	.....
Lot 22 .....	.....	370	60	310	62
Lot 4 .....	6	.....	.....	.....	.....
Lot 1 .....	8	300	100	260	50

The following is a list of stock on hand December, 1920:—

<i>Hardwoods:</i>		
Ash, White .....	8,500	
Chestnut .....	4,000	
Cherry Bl. ....	1,450	
Hackberry .....	1,400	
Hicorz ovata .....	500	
Locust Bl. ....	2,900	
Maple, Man. ....	2,700	
Maple, Soft .....	6,300	
Oak, Red. ....	20,900	
Poplar cuttings .....	250,000	
Walnut, Bl. ....	37,300	
Walnut Wh. ....	15,000	
		350,950
<i>Conifers:</i>		
Pine, Austrian .....	20,000	
Pine, Jack .....	2,134,000	
Pine, Scotch .....	2,349,500	
Pine, White .....	950,000	
Spruce, Norway .....	80,000	
Spruce White .....	2,728,000	
Cedar, White .....	505,000	
Balsam .....	8,000	
		8,774,500
Total of Hardwoods and Conifers .....		9,125 450

*Additions to Property.*—The most important addition to the station property was the installing of a new water system. This includes a pumping station capable of forcing 7,600 gallons of water per hour into a 20,000 gallon tank. This is elevated 100 feet from the ground, which gives excellent pressure to the system. 700 yards of 4-inch iron pipe form the main which, in turn, supplies the various nursery compartments through the existing 5 acres of overhead sprinkling system.

Four new buildings have been erected during the year. An implement house, 101 feet long by 30 feet wide, provides needed room for all machinery. One small barn, a common room for employees, and an additional workmen's house were also erected. This makes a total of 8 dwellings as follows: Manager's residence, foreman's house, 5 houses for teamsters, fire ranger, and workmen, and a common room.

Two and a half acres of new lawn was made, a half-mile cedar hedge planted, and 140 rods of wire fence was erected.

Several new roads were laid out on the property, necessitating the erection of two new bridges. Five miles of old road were cleared of brush, to facilitate fire-fighting work when needful. All fire roads were ploughed and cultivated, and an additional fire line of one-third of a mile in length was cleared and broken up.

*Improvement Cutting.*—On the 1,720 acres comprising the forest station, approximately seventy per cent. consists of woodland. During favorable weather in late fall and winter, improvement cutting was carried on, over an area of forty acres. Weed trees and windfalls were cut down, after which they were converted into logs and cordwood, the remaining slash being burned. Trees that showed evidence of butt rot, fire scar, ill form, oppression and senility were removed and utilized to the best advantage. The aim was to leave a stand composed of only sound, healthy, vigorous trees, thereby minimizing fire hazard and preventing, to a degree, insect and vegetable infection.

*Protection (Disease and Insects).*—Two men were employed during the summer months in connection with the eradication of Ribes for the prevention of the infection of nursery material with White Pine Blister Rust. No evidence of either Pine or Ribes stage of the disease was found. Destruction of White Pine Weevil was also carried on and all attacked leaders of trees in older plantations were removed, in an attempt to lessen the destruction caused by this insect.

*Labor.*—One of the difficulties in building up a permanent staff has been the lack of house accommodation, either on the Government property or elsewhere. With the increasing number of dwellings being erected at the station, this problem has been partially solved. For part time employment, which is a big factor in work of this kind, the neighborhood contributes plenty of young men. During the season, the personnel comprised, besides the manager of the station, a foreman, an under-foreman, 2 teamsters, a fire ranger, and 28 workmen.

### *Tree Planting.*

*Private Planting.*—The work of tree distribution to private owners throughout the province was again carried on during the spring. The species available for distribution for the season of 1921 were as follows: Scotch pine, black walnut, butternut, red oak, white ash, sugar maple, white elm, and black locust.

Last year some fifty odd applications more than the branch could fill, were received. 225 separate operations were supplied. The number of trees for these amounted to 291,769 of all species. In terms of acres, this would represent, at six feet spacing, 240 acres of reforested land.

*Government Planting.*—Owing to the fact that the demand for planting material throughout the province was so great this year, little permanent planting was done at the forestry station at St. Williams. A mixture of Scotch pine and European larch was planted, covering an area of 5 acres, and 10,000 white spruce were planted in mixture with red oak.

A plantation of 3 acres was set out in Leeds county, with the co-operation of the council of Elizabethtown Township, where a sand ridge had been inconveniencing traffic on a county road for years. This plot will serve as a demonstration plantation for land owners in the neighborhood, who are threatened with drifting soil.

Extensive planting work was also carried on in connection with reclaiming the sand banks of Prince Edward County. These banks consist of a finger-



shaped peninsula which separates the waters of West Lake—a lake five miles in two dimensions—from Lake Ontario. The peninsula is three-quarters of a mile wide at its base and extends five miles in a north-westerly direction until it reaches the town of Wellington in a narrow point. From its orientation, it will be seen that part of the peninsula lies at right angles to the prevailing winds of Ontario. Because of this, much excellent land farm has for years been continually spoiled or covered up by drifting sand. Since this section of the country was first surveyed in 1852, it is estimated that 85 acres of good land have been covered with drifting soil.

The planting material used in this work consisted of Carolina poplar cuttings and green willow cuttings and limb material. Belts were planted one hundred feet apart, each belt consisting of one row of limb material and five to seven rows of cuttings, and were planted at right angles to the prevailing winds. The area planted would aggregate 150 acres and covers the part of the banks where the despoiling of agricultural land is most imminent.

### *Seed Collecting.*

The Forestry Branch endeavors, as far as possible, to secure in the Province all seed used for the growing of nursery stock. The only exception, which is made in this regard, is Scotch pine seed. This tree, not being a native of America, the seed must necessarily be imported until trees of our own growing have become old enough to supply our needs. A quantity of Scotch and jack pine cones were gathered from the plantations at St. Williams; also 140 bushels of jack pine cones were gathered at a lumbering operation in Northern Ontario during the winter.

One of the most useful species for reforestation in Ontario is our native red pine. It grows well on poor soil, has few enemies, and is valuable for timber purposes. The only drawback in its use is the infrequency of its seed years. The season of 1921 was a good seed year for the species. The crop was not as general as the crop of 1913 was reported to have been, but groups of trees in the area covered, bore a maximum crop of cones.

The collecting of this species was confined to a section of Simcoe County, lying between Angus, Lisle and Tioga, which includes a large section of Camp Borden. Through the liberality of the Air Board in granting the use of a building for extracting purposes, and by co-operation in other ways, the work was carried on more expeditiously. It is doubtful whether a more suitable area than this for collecting red pine seed exists in the province. Here, the trees occur scattered in pure stands, and growing in this way, they have assumed the form of open grown trees which increases their value for seed collecting purposes.

The extracting of the seeds is carried on at the forestry station at St. Williams and also at Angus, where large quantities of seed have been gathered the last two years. Both plants handle the material which is gathered locally. The larger one is at Angus, and has a capacity of 20 bushels of red pine or 75 bushels of white spruce per 8-hour day. Two men do all the work, including firing, turning and filling the drums and cleaning of seed.

During this season, the crop of most hardwood seeds was poor. It was impossible to secure quantities of such useful trees as maple, white ash, and elm.

Seed collected during the year is as follows:

SPECIES.	No. of Bushels.	Pounds of Seed.	Cost per Lb.
Red Pine.....	440	300	\$6.74
Scotch Pine.....	95	56½	2.94
Jack Pine.....	175	.....	4.45
Austrian Pine.....	3	.....	.....
Black Locust.....	6	10½	4.11
Black Cherry.....	5-8	.....	.....
Red Oak.....	13	.....	2.25
Honey Locust.....	.....	8	1.75
Sweet Chestnut.....	1½	.....	.....
Walnut.....	25	.....	.....
Soft Maple.....	1	.....	.....

#### IV. FOREST PATHOLOGY.

(Report of Dr. J. H. Faull for 1921).

Many interesting problems of forest pathology in Ontario have been called into review during the last year, some in continuation of uncompleted studies, others taken up in response to specific needs or inquiries. The field work was carried on mainly in the Temagami Forest Reserve, where, as in the past, valuable assistance was afforded by the Chief Ranger, Mr. C. E. Hindson. In addition, visits were made to the hardwood area of Algonquin Park, to the recently cut-over limits in the neighborhood of Otter, and to the pulpwood district north of Temiskaming. A few days were spent at the request of the Division of Forest Insects, Entomological Branch, Ottawa, in a co-operative examination of pulpwood forests injured by the spruce bud worm, to discover, if possible, what part fungi or other factors play in destroying the trees attacked by this pest. I was associated in my work, for a part of the time, with Mr. A. W. McCallum, B.Sc.F., Dominion Forest Pathologist, who was engaged in the study of a root rot of living trees, caused by the honey agaric, *Armillaria mellea*, an especially abundant form in our northern forests, and one which appears to be virulent in overcrowded stands or in trees much weakened by needle blight, spruce bud worm attacks, or other injuries, and with Mr. H. P. Bell, M.Sc., of Halifax, Nova Scotia, who was intimately concerned with certain diseases of balsam. As a part of the field work, extensive additions were made to our reference collections of pathological materials. These have likewise been considerably augmented by specimens sent in from various parts of Ontario, and from outside places, especially the contiguous provinces and states.

##### (1) NEEDLE BLIGHT OF WHITE PINE.

Observations for the fourth summer in succession, were made on the needle blight of the white pine, and the conclusions stated in the Reports of the Minister of Lands and Forests for 1919 and 1920 have been confirmed and extended. This malady, a yellowing or reddening in late spring or early summer, of the needles of the white pine, so prevalent in the Temagami Forest Reserve and to some extent in other parts of Ontario, is due to a killing of the absorbing

roots, ascribable to a drying-out that takes place in periods of drought in shallow or leachy soils. The result is that at the time the new needles are expanding, there is a sudden demand for water that cannot be supplied and, in consequence, the young needles turn pale and then redden from the tips downward. Owing to the dry weather experienced last summer (1921), the blight, while not as abundant as in 1918, was more sharply defined than in 1920. The forest commissioner for the State of Maine reports that a similar situation has prevailed in the pine forests on sandy soils in the southern part of Maine. But white pine (*Pinus Strobus*) is not the only tree affected in the blight areas, although it probably suffers much more severely than other types; proof is accumulating that shows that other timber species are involved to a greater or less extent, dependent on their relative susceptibilities. A full account will be published when the investigations in hand have been completed. The status of 633 white pine trees, whose history has been followed since 1918, is summarized in the table that follows:

Blighted trees studied.....	358
Checks (healthy trees).....	275

Of the checks, two only have developed blight, and under known conditions. They blighted in 1919, following a partial lifting of the thin soil cover and its permanent displacement from the bed of coarse broken rock on which it lies—the action of ice. These trees died in 1921. The blighted trees have been divided into two classes: (1) those with trunks 6 inches or less in diameter (b.h.); (2) those with trunks more than 6 inches in diameter.

	Blighted in 1918.	1919	Died 1920	1921	Total % dead.	Showing blight in 1921.	Apparently recovered.	Doubtful.
I. ....	147	2	6	2	6.8	24	105	8
II. ....	211	12	20	18	23.7	80	44	37

From the results obtained, it is reasonable to conclude: (1) that young stands are not likely to be seriously depleted by needle blight; (2) that injury to heavily blighted mature stands may be so great as to be a deciding factor in determining the time of harvesting.

(2) BUTT ROTS.

Butt or stump rots constitute the outstanding destructive agencies at work in our Ontario forests. No type of forest is exempt, and every mature stand becomes more and more susceptible with increasing age. Butt rots, once established, continuously decrease stumpage values; they are also responsible for most windfalls, and so for the vast amounts of debris that litter the floors of our forests, affording a limitless supply of highly combustible wasted materials. There are various types, but all are due to the action of parasitic fungi. Fortunately, they are almost altogether restricted to mature or suppressed timber; young trees are practically immune. This fact greatly simplifies the problem of control. In this connection, it is in place to state that any effective plan of scientific forest management is bound to take cognizance of the part played by butt rots in the economics of the forest, and the administration of any such plan will not only secure a maximum yield from the forest, but will also make a long stride forward in the matter of fire control.



Our investigations on these trunk and root diseases have so far followed along three lines: (a) the tabulation of the various types as to kind, host relationship and distribution; (b) the working out of a ready means of field and laboratory diagnosis for each type; (c) consideration of particular cases in response to special inquiries. To these, others should be added—such, for example, as the rate of progress of an infestation, and the relation of butt diseases to age, specific resistance and environmental factors. As a part of the scheme of tabulation, it would be especially profitable to include information relative to the age at which various species of trees lose their resistance to the inroads of the different kinds of decay fungi. Observations show that, in general, this feature will vary with location, and especially the characters of the physical and the biotic environment—such factors, for example, as soil, crowding, etc., and possibly climate. The factor of wounding or killing of roots is also important, for it is probable that none of the fungi concerned can gain entrance into the host except through wounds or dead areas in the bark and cambium. To what extent wounded and dead roots regularly occur in different localities remains to be seen. But from an examination of the root systems of many trees in the Temagami Forest Reserve, it is certain that in that region wounds are very common on the centrally directed faces of the main roots, particularly just below or near the trunk axis, and the inner roots are frequently dead.

(a) Much progress has been made in the work of tabulation. The fundamental need of this undertaking is indicated by the fact that several types of butt or heart rot have been found to be new. One of the most important of the latter, and recorded here for the first time, is a root and butt rot of spruce, hemlock, and white pine, with which a pored type of fungus, *Polyporus Tomentosus* Fries, is constantly associated. On further search, it will probably be found that the red and the jack pine should be included in this list, and possibly balsam. The fruiting body of the fungus is yellowish, leathery in texture, stalked, with a rounded cap 1-3 inches in diameter; it commonly grows on the soil in the neighborhood of coniferous trees, but is attached by its stalk to the covered roots of its host. The decay caused is of the piped or speckled type—whitish spots at first in the rather darkened wood, later becoming small cavities up to half an inch or more in length and a twelfth of an inch in diameter. This decay quite closely resembles the common “pecky wood-rot” or “partridge rot,” caused by *Trametes pini*, but differs from the latter in that it is a butt rot. While not infrequent throughout it is apparently much commoner in some localities than in others. In the Otter district, for example, a high percentage of the white pine was affected, and to such an extent that frequently the butt log was of no value and was allowed to remain on the ground. I am indebted to Mr. A. W. McCallum for striking specimens of this decay as a heart rot in black spruce.

(b) One of the chief drawbacks encountered in investigating butt rots is the lack of information on the identity of the causal organisms. This applies to the larger number of butt and heart rots of conifers in America. Balsam rots may be cited as an extreme case, for though several types occur in living balsam trees, no one as yet, so far as the literature shows, has definitely established a connection with a specific fungus in any one case. To meet this need, and as an outgrowth of the present work, investigations in this field were independently inaugurated in the provincial University two years ago, and are now being vigorously carried forward with fruitful results. The methods employed are those so successfully used in cultural diagnostic studies of bacteria.



(c) A special case, calling for an investigation of heartwood weakened by fungi, was referred to the Forestry Branch by the manufacturers concerned, a year or so ago, in connection with the use of birch for spokes. A preliminary examination of our birch was soon after undertaken, and it has become evident that certain types of defective trees, easily recognizable, should be avoided as a source of wood calling for maximum resistance. The defects in question



Fig. 1.—Fruit-body of the True Tinder Fungus on living Yellow Birch.

are ascribable to the true tinder fungus, one of the oldest known fungi, but like many others, imperfectly understood. A preliminary account follows.

### (3) A PRELIMINARY ACCOUNT OF THE TRUE TINDER FUNGUS.

The true tinder fungus attacks standing or fallen beech, birch, poplar, and occasionally elm, causing a whitish decay. It is readily recognized by its

fruiting-bodies or sporophores, the grayish hoof-shaped punks or brackets so common on the trunks of its hosts (Figure 1). Most frequently this fungus works from the crown down, though not invariably so. The true tinder fungus abounds throughout Ontario, and is also frequent in the adjoining states. Von Schrenk & Spaulding (Von Schrenk, H. & Perley Spaulding: Diseases of Decid-



Fig. 2.—Section of living Beech Tree showing Heart Rot caused by the True Tinder Fungus.

uous Forest Trees, Bull. No. 149, Bureau of Plant Industry, U.S. Dept. of Agr., Washington, 1909) report that "In northern New England, New York, Michigan, Wisconsin, and Minnesota in particular, the tinder fungus (*Fomes fomentarius*) is one of the commonest wood-destroying forms found in deciduous forests." The observations of the writer have been made for the main part in the Algonquin Park and the Lake Ontario areas.

Botanically, many new points of interest have been noted—such as the characters of its spores, their viability and method of germination, the remarkable habit of vernal spore discharge, and the production of spores for three or four years from the same pore layers. But the main interest here centers on

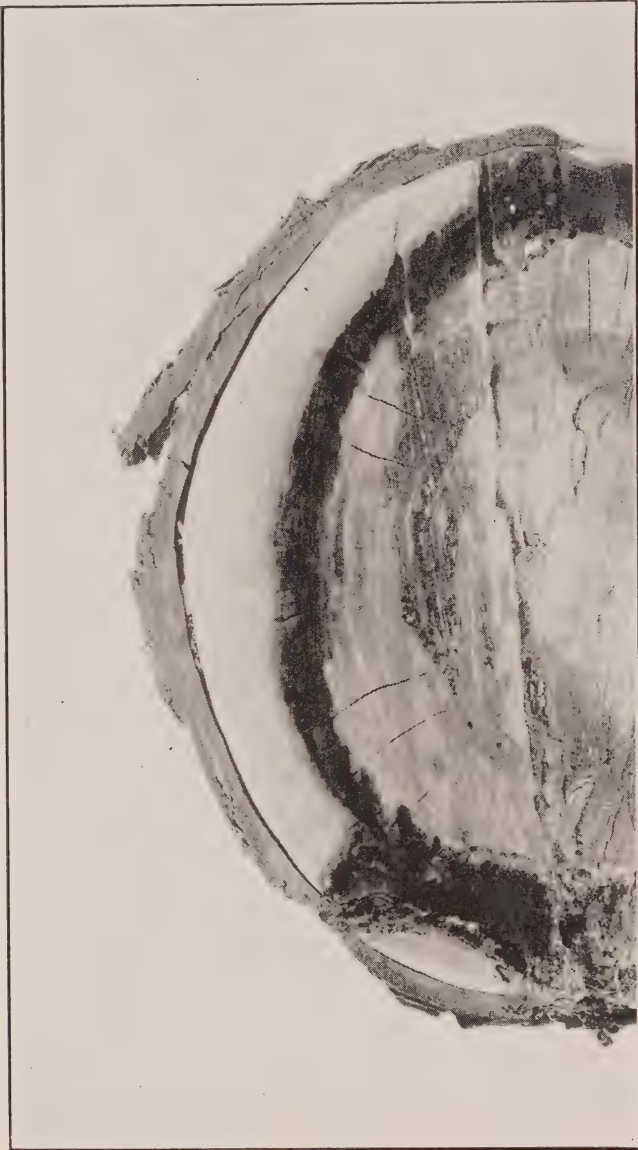


Fig. 3.—Section of Trunk of living Yellow Birch showing decay in inner sapwood and heartwood caused by the True Tinder Fungus. This section was kept for a few weeks under conditions favorable to development of fungus on the affected cut surface. The surface growth of the fungus darkened.

the relationship to its host. Regarding this feature, a general misconception has existed, and one that directly concerns the application of the heartwood to some industrial purposes. Various manuals or bulletins, dealing with the



fungus, ascribe to it a decay in the outer sapwood immediately under the bark, from there working inwards. An examination of hundreds of affected trees has failed to substantiate this view in any one instance. On the contrary, in living trees, the fungus enters through wounds or broken or dead branch stubs and penetrates to the inner sapwood and heartwood, rapidly spreading up and down in these regions of the stem and more slowly outward towards the bark. Figure 2 illustrates a section taken from a living beech in which this fungus is working as a pure heart rot. In birch it appears to spread more abundantly



Photographs by Hedgcock & Hunt.


Fig. 4.—Cankers in Lombardy Poplar caused by *Dothichiza populea*.

and rapidly in the inner sapwood as is shown in Figure 3, but it is important to note that the adjoining heartwood is also affected and, in consequence, weakened. One of the most significant features is the circumstance that cured timber from trees in which the decay is in its incipient stages, is indistinguishable by ordinary means of examination at the command of the user, from perfectly sound timber. The infection of the birch appears to be commonly associated with the breaking of the branches of the crown, due to the action of a boring insect. Complete results will be published when the investigations have been brought to a conclusion.



## (4) A POPLAR CANKER.

Early in May, 1921, an examination was made for the Toronto Harbor Commission of a plantation of about 500 Lombardy poplars planted out in the fall of 1920 on the Lake Shore road, York County, which were found to be affected with a canker disease caused by an imported fungus, *Dothichiza populea*, Sacc. & Briard. Fully 80 per cent. of the trees were diseased, and all were cut down and destroyed. This fungus, apparently, found its way into America originally from Europe in nursery stock, and in the present instance there is every probability that the disease was already established in the young trees when they left the local nursery from which they were obtained. A visit to the nursery in question at the time, resulted in finding the disease in the remaining stock of Lombardy poplars. The causal fungus attacks the trunks and branches of trees of all ages, killing them outright or permanently disfiguring them; but it is especially virulent in newly transplanted trees and in stock heeled in for early spring planting. Besides the Lombardy poplar, it is also known to attack the cottonwood, *populus deltoides*. To what extent other poplars are susceptible is not known, but it seems worth while that this feature should be watched. It is also certain that there should be the closest inspection on the part of nurserymen and of those who purchase poplars from nurseries.

This disease was reported for the first time in America by Hedgcock & Hunt in 1916 (Hedgcock, George C. & N. R. Hunt: *Dothichiza populea* in the United States, Mycologia 8, pp. 300-308, 2 plates, 1916), but was known thirty years or more prior to that in Europe, especially in France, Germany and Italy. Specimens were received by the writer from an eastern source in Canada in 1917 through the courtesy of the Dominion Botanist. In Europe, *populus deltoides* seems quite as liable to attack as *populus nigra*, and in France severe losses have been experienced in plantations of the former grown for timber. 

The causal fungus attacks the bark, killing the cambium. In such spots, the bark becomes more or less sunken, but not much discolored (Figure 4). These depressed areas or cankers rapidly extend in all directions, and as a result, girdling commonly takes place. Pustules soon appear on the cankers, and from them emerge countless numbers of tiny spores which serve to transmit the parasite to other hosts. Diseased trees in nurseries or in plantations should be cut down and burned.

I have the honour to be, sir,

your obedient servant,

E. J. ZAVITZ,

*Provincial Forester.*

Toronto, Ont., October 31st, A.D. 1921.

*Appendix No. 49.*AGREEMENT BETWEEN PROVINCE AND E. W. BACKUS ET AL.  
REFERRED TO IN APPENDIX NO. 50.

THIS INDENTURE made in triplicate this thirtieth day of September, A.D. 1920.

BETWEEN:

His Majesty the King, represented by the Honourable the Minister of Lands and Forests for the Province of Ontario, hereinafter called the Crown,

OF THE FIRST PART,

—and—

Edward Wellington Backus, of the City of Minneapolis, in the State of Minnesota, Manufacturer, The Keewatin Lumber Company, Limited, and The Keewatin Power Company, Limited, hereinafter called the Company,

OF THE SECOND PART.

WHEREAS the Company did on the 7th day of July, A.D. 1920, enter into an Agreement with the Town of Kenora for the establishment of pulp and paper mills and saw mills in the town of Kenora, a copy of which Agreement is hereto attached, marked Schedule "A,"

AND WHEREAS the said Agreement has been ratified by the ratepayers of the said Municipality;

AND WHEREAS the Crown did by Agreement dated the 19th day of August, 1914, agree to sell to the Keewatin Lumber Company, Limited, the pulp wood on the area known as The Lake of the Woods Pulp Limit, a copy of which last-mentioned Agreement is hereto attached, marked Schedule "B";

AND WHEREAS the Keewatin Lumber Company, Limited, is in default under the terms of the said last-mentioned agreement and has now no rights thereunder;

AND WHEREAS there is not now, nor is there capable of development at Kenora, water power sufficient to produce electrical energy to operate a pulp mill of the capacity in the said Agreement, marked Schedule "B";

NOW THEREFORE THIS INDENTURE WITNESSETH that in consideration of the premises and of the mutual covenants, promises and agreements hereinafter contained, it is hereby agreed as follows:

1. The Crown hereby agrees that the said Agreement of the 19th day of August, 1914, between the Crown and the Keewatin Lumber Company, Limited, set out in Schedule "B" hereto, is now revived and is to be construed as in full force and effect from and after this date, save that paragraph 7 of the said Agreement, dated the 19th day of August, A.D. 1914, shall be and the same is hereby amended by striking out the figures "40" in the first line of said paragraph, and substituting the figures "80" and by striking out the figures "20" in the second line thereof and substituting the figures "40."

2. The Crown agrees to grant to the Company a lease of the water power known as the White Dog Rapids on the Winnipeg River in the District of Kenora, together with a strip of land on each side of the said rapids and all

the other land necessary for flowage purposes, together with all water power privileges and all rights, easements and appurtenances which the Minister of Lands and Forests may deem expedient for the utilization of the waters of White Dog Rapids for power purposes. For this purpose the Company shall submit plans and descriptions of survey of the necessary land required to be used in developing the said water power privilege and the construction of the necessary works thereon, such plans to be subject to the approval of the Minister of Lands and Forests, who, upon such approval, shall prepare a form of lease of the same in which the lands and lands under water to be covered by the lease will be specifically delimited. Upon the execution of said lease the Crown will grant to the Company the right to flood any Crown lands which the said Minister of Lands and Forests may deem expedient, and to such an extent and in such manner and subject to such conditions and stipulations as the Minister may deem expedient; all plans and specifications of works for the storage and regulation of said waters to be subject to the approval of the said Minister. The lease of the said water power will be the standard form of Government lease of water power, but in addition the said lease and right so granted shall be subject to the rights of all private owners of property who are liable to be affected by the development of the water power at the said Rapids or the storage of water in connection therewith, and to such rentals, reservations, provisos, conditions and stipulations (including the regulation of the Norman dam at the outlet of the Lake of the Woods) as the Minister of Lands and Forests may deem to be in the public interests.

3. Neither said lease nor said right to flood Crown lands shall in any way be taken or construed as a demise or grant to the Company of any lands, or lands under water, rights or privileges not within the limits, power or legislative authority of the Province of Ontario, it being understood and agreed that the lands and lands covered by water to be therein demised or granted, and all rights or privileges to be thereby conferred, are limited to such as are owned or controlled by the Crown as hereinbefore defined.

4. It is hereby expressly provided and agreed that the Agreement for a lease to be given the Company as aforesaid is for the purpose of enabling the Company to carry out the terms of their said agreement with the Town of Kenora (Schedule "A") and their agreement with the Crown (Schedule "B") and is conditional upon the due performance of said agreements (save as otherwise herein provided) and upon the failure or neglect of the Company to carry out any of the terms of said agreements, or either of them, as herein provided, or of this agreement, the Minister of Lands and Forests for the Province of Ontario, for the time being shall, in addition to all other powers contained in said lease, have the power to cancel the said lease and the agreement therefor herein contained.

5. In consideration whereof the Company agree that they will forthwith after the execution of this Agreement proceed with the erection in the Town of Kenora of the mills mentioned in paragraphs 1, 2 and 3 of said Agreement set out in Schedule "B" hereto, and in accordance with the provisions of the last-mentioned agreement will erect and complete the said mills mentioned in said paragraphs and will in all other respects carry out their obligations under the terms of the said Agreement as now revived, varied and amended, including the manufacture in the said mills of the wood from the area described in the said agreement (Schedule "B"), and specifically undertake that they will construct and place in operation one unit of the said pulp mill of 50 tons daily capacity, not later than the 1st day of October, 1921, and will continue con-



struction work uninterruptedly until the mills mentioned in the said Agreement (Schedule "B") shall be fully completed, subject to the direction of the Minister of Lands and Forests as to the erection of the paper mill.

6. And the Company hereby covenants and agrees to indemnify and save harmless the Crown against any and all causes of action, loss, costs, damages or expenses which may be awarded by lawful authority against the Crown in connection with, or by reason of, the development of said water power at White Dog Rapids.

7. The Company further agrees to reserve such quantities of news print paper as they may be required from time to time so to do by the Minister of Lands and Forests for the purchase by publishers within the Dominion of Canada.

8. The Crown will presently offer for public competition the pulpwood and timber on an area comprising a part of the English River Watershed and which area is bounded on the West by the boundary of the Province of Manitoba; on the South by the National Transcontinental Railway, on the North by the English River and Lac Seul, and on the East by the Westerly limit of Indian Reserve No. 28 extended north in a straight line to the northerly boundary and south to the southerly boundary of the said area; and the Company will tender for the said area in the terms of the conditions of sale thereof, one of which will be that the timber and pulpwood on the said area will be manufactured at Kenora (including the manufacture into newsprint paper of the pulpwood suitable for that purpose) and if the Company's tender is accepted the Company will enlarge their said mills at Kenora to at least the capacity mentioned in the said Agreement (Schedule "A") and will accept this Agreement as a satisfactory agreement within the meaning of clause (a) of paragraph 1 of the said Agreement (Schedule "A") and as a full compliance by the Town of Kenora with its obligations under clauses (ee) and (ff) of the said Agreement (Schedule "A") and the Company will thereupon carry out and perform all their obligations under the said agreement (Schedule "A") and will further extend the said pulp and paper mills and increase the capacity thereof beyond that called for by the said Agreement (Schedule "A") as they may from time to time be required by the Minister of Lands and Forests to do, having regard to the quantity of pulpwood that will be available for the said mills. Provided that if it is ascertained by the Minister of Lands and Forests within three years from this date that there is not sufficient pulpwood and timber on the above described area to operate the said mills in Kenora as set forth in the said Agreement (Schedule "A") he will put up for public competition such an additional area or areas to the north of the English River as will provide the necessary timber and pulpwood for the said purpose, and in the Conditions of Sale thereof it shall be provided that the manufacture thereof shall be in the Town of Kenora. The ascertainment and estimate by the Minister as aforesaid shall be final and conclusive and binding on all parties to this Agreement.

9. Nothing in this agreement shall affect the application of the provisions of any statute or order-in-council whether now existing or which hereafter may be enacted or made dealing with the regulation, control or inspection of water power and of the use of waters in Ontario.

10. If the Company fails or neglects to erect, extend and operate the said mills in accordance with the terms of this Agreement, then all rights under this Agreement shall terminate and be forever forfeited. Provided, however, that there shall be no forfeiture or cancellation hereunder for the reason (if



that situation should arise) that the forest products available to the Company are found inadequate to carry on the operation of the said mills to the capacity mentioned in the said Agreement (Schedule "A").

11. Where the word "Company" occurs in this Agreement, it shall be understood to refer to and include the heirs, executors, administrators, successors and assigns of the parties hereto respectively of the Second Part, and this Agreement shall be binding upon all of the aforesaid parties.

IN WITNESS WHEREOF the Minister of Lands and Forests has hereunto set his hand and seal and the said Edward Wellington Backus has hereunto set his hand and seal and the Companies have affixed their corporate seals and the President of the said Companies has signed.

WITNESS:

F. J. NIVEN.

BENIAH BOWMAN,

Minister of Lands and Forests

EDWARD W. BACKUS,

THE KEEWATIN POWER COMPANY,  
LIMITED, by its President

EDWARD W. BACKUS.

THE KEEWATIN LUMBER COMPANY,  
LIMITED, by its President

EDWARD W. BACKUS.

[SEAL]

DEPARTMENT OF LANDS AND FORESTS.

[CORPORATE SEAL]

THE KEEWATIN LUMBER COMPANY,  
LIMITED.

### *Appendix No. 50.*

## THE ENGLISH RIVER PULPWOOD AND TIMBER LIMIT AGREEMENT.

THIS AGREEMENT made in triplicate this seventh day of January, One Thousand Nine Hundred and Twenty-one.

BETWEEN:

His Majesty, the King, represented by the Honourable,  
the Minister of Lands and Forests for the Province of  
Ontario, hereinafter called THE CROWN.

OF THE FIRST PART,

—and—

Edward Wellington Backus of the City of Minneapolis  
in the State of Minnesota, Manufacturer, The Keewatin  
Lumber Company, Limited, and the Keewatin Power  
Company, Limited, hereinafter called THE GRANTEES.

OF THE SECOND PART.

WHEREAS by advertisement, duly published, the Honourable, the Minister of Lands and Forests for the Province of Ontario, called for tenders to be received by him, up to and including the eighteenth day of December, 1920, for the right to cut forest products on an area in the English River watershed in the District of Kenora in the Province of Ontario, hereinafter more particularly described;

AND WHEREAS on the said eighteenth day of December, 1920, the said Minister received from the Grantees a tender for the right to cut the forest products on the said area, which said tender was duly accepted on the twenty-second day of December, 1920;

AND WHEREAS the grant of the right to cut forest products upon said area was, by said advertisement for tenders and by the tender of the said Grantees, based upon and subject to certain terms, conditions and stipulations;

AND WHEREAS this agreement is entered into for the purpose of ensuring the performance by the Grantees of the obligations contained in the said tender and acceptance thereof, as hereinafter defined, and of securing the Grantees the said supply of forest products for the purposes of the mill or mills to be established, maintained, conducted and carried on in the Town of Kenora in said District of Kenora;

AND WHEREAS under the terms of an agreement between the parties hereto dated the 30th day of September, A.D. 1920, and executed by the parties hereto, the said Grantees herein agreed to forthwith, after the execution of said agreement, dated the 30th day of September, A.D. 1920, proceed with the erection in the Town of Kenora, of certain mills therein referred to, and, upon certain other terms and conditions therein contained, to enlarge and further extend said mills and increase the capacity thereof as therein provided;

AND WHEREAS, in fulfilment of its promise therein contained to offer for competition certain pulpwood and timber on the area comprising a part of the English River Watershed, referred to in the 8th paragraph of said agreement, dated the 30th day of September, 1920, the Crown has offered for competition the forest products hereinafter more particularly described, and the Grantees have tendered for the said area, and the said Grantees' offer therefor has been accepted by the Crown, and the Grantees are now under obligation to carry out all their obligations to erect, construct, enlarge, extend, complete and operate the mills provided for in said agreement, dated the 30th day of September, 1920;

NOW THEREFORE, THIS INDENTURE WITNESSETH that in consideration of the premises and of the mutual covenants, promises and agreement hereinafter contained, it is hereby agreed as follows:

1. The Grantees shall proceed with the construction of the pulp and paper mills in said Town of Kenora provided for in said agreement, dated the 30th day of September, 1920, and on or before the 22nd day of October, 1921, shall have constructed and have in operation in the said Town of Kenora a pulp mill of a capacity of, and manufacturing, fifty (50) tons of pulp daily, and shall continue uninterruptedly the construction work upon said pulp and paper mills until there is being manufactured at said pulp and paper mills 200 tons of newsprint paper per day.

2. The Grantees shall fully complete and equip said pulp and paper mills and have the same in operation on or before the 22nd day of December, 1923, expending in said construction of said pulp and paper mills the sum of at least \$2,500,000.00, of which sum of \$2,500,000.00 so to be expended, the sum of not less than \$1,000,000.00 shall have been expended by the Grantees, on or before the 22nd day of October, 1921.

3. Upon and after the said completion of said pulp and paper mills, the said Grantees, during the currency of this agreement, shall continue to operate the said pulp and paper mills so that the daily output thereof shall not be less than 200 tons of newsprint paper

4. The Grantees shall further extend the said pulp and paper mills and increase the capacity thereof as from time to time they may be required by the Minister so to do, having regard to the quantity of pulpwood available for the said mills.

5. The Grantees shall provide and operate a sawmill or sawmills in the said Town of Kenora of such capacity as the Minister from time to time may require, and shall operate the said sawmill or sawmills during the whole period of this agreement so that the output of said sawmill or sawmills, in each year thereof, shall be such reasonable quantities as from time to time may be required by said Minister.

6. The said Grantees shall employ and keep employed in connection with the operation of said pulp and paper and sawmills, at least 1,000 persons for at least 10 months in each and every year during the period of this agreement.

7. The said sawmills shall be in operation during the year 1921.

8. The Grantees shall further extend the said pulp and paper mills and increase the capacity thereof beyond that hereinbefore provided for, as they may from time to time be required by the Minister so to do, having regard to the quantities of pulpwood and other timber that will be available for the said mills.

9. In consideration of a cash bonus of \$50,100 and of said expenditure, and of the contracts and agreements entered into on the part of the Grantees, the Crown will and doth for the dues hereinafter set forth and provided, and subject to the terms, conditions and regulations as to the locality and manner of cutting, measuring, removing and driving same as may from time to time be imposed by the Minister, and subject also as is hereinafter set forth and contained, grant to the Grantees the right to cut and remove all the merchantable timber or wood in or upon the area hereinafter described, to be used only in and for the purpose of supplying the said mill or mills to be erected, for a period of twenty-one years from the date hereof, from unoccupied, unsold and unlocated lands of the Crown as follows:

Commencing at the intersection of the northerly limit of the Canadian National (Transcontinental) Railway right-of-way with the inter-provincial boundary between the provinces of Ontario and Manitoba; thence north along said inter-provincial boundary to the southerly shore of the English River; thence in a general course north-easterly, following the southerly shore in all its windings of said English River, lake expansions and Lac Seul to the intersection with the west limit of Indian Reserve No. 28; thence south-east and south, following the westerly and southerly boundaries of said Indian Reserve to the south-westerly angle thereof near Lost Lake; thence continuing south astronomically to the northerly limit of the aforesaid right-of-way; thence westerly, following the said limit right-of-way to the point of commencement, containing by admeasurement three thousand and forty-six square miles (3,046 sq. miles) more or less.

Saving and excepting from the above-described area all Indian Reserves, all townsites, and all those parts of the Townships of Rice, Malachi, Redditt, Smellie, Redvers, Wabigoon, Buller, Wauchope, Ladysmith, and Rowell, lying north of said right-of-way, and all islands in lakes or rivers within the described area; also the rights of timber licensees as to timber sold on timber berths, A.T.W. 2, 3,

9, and 10, and timber sold on all other timber berths within the described area, under license.

Saving, excepting and reserving also therefrom all water powers; and also all lands heretofore patented, leased, located or applied for, in respect of which such proceedings have been taken or shall hereafter be taken as in the opinion of the Minister entitles the applicant or applicants to a lease or patent for such lands; together with the right of the Crown to sell, lease, locate or otherwise dispose of any water powers or lands included in the hereinbefore described area on such terms and conditions for settlement, mining or other purposes as the Minister may deem advisable.

10. The Grantees as to the right to cut the merchantable timber and wood on the said area as above described, shall pay a bonus of \$50,100 (the receipt whereof is hereby acknowledged) and the following dues on said merchantable timber and wood: that is to say,

	Cents
Black Walnut and Oak, per cubic foot.....	.06
Elm, Ash, Tamarac and Maple, per cubic foot.....	.06
Birch, Basswood, Cedar, Poplar, per cubic foot.....	.05
Red and White Pine, and Jackpine, per cubic foot.....	.07 $\frac{1}{2}$
All other woods, per cubic foot.....	.03
Basswood and Poplar sawlogs, per thousand feet B.M.....	2.00
Pine sawlogs, per thousand feet B.M.....	2.50
Maple and Oak sawlogs, per thousand feet B.M.....	2.50
Hemlock, Tamarac, and other woods, per thousand feet B.M.	1.50
Spruce, per thousand feet B.M.....	2.00
Cordwood (hard), per cord.....	.40
Cordwood (soft), per cord.....	.25
Tan Bark, per cord.....	.60
Spruce Pulpwood, per cord.....	.80
Balsam and other Pulpwood, per cord.....	.40
Railway Ties, per tie.....	.10
Spruce Boom Timber, per thousand feet B.M.....	2.00
Pine Boom Timber, per thousand feet B.M.....	2.50
All other Boom Timber, per thousand feet B.M.....	2.50
Cedar Poles, 30 ft. and less.....	.25
Cedar Poles, 31 ft. to 40 ft.....	.50
Cedar Poles, 41 ft. to 50 ft.....	.75
Cedar Poles, 51 ft. and over.....	1.00
Cedar Posts, each.....	.02

or such other rates or dues thereon as may from time to time be fixed by the Lieutenant-Governor-in-Council; but in no case shall the price so to be fixed be at higher figures than the price at which the general public shall be permitted to cut on other portions of the Crown domain, or than others, similarly situated, shall be permitted to cut.

11. It is distinctly understood that the Grantees obtain the right to cut the timber only, and have no right to the soil or use thereof, except as may be necessary for cutting and removing the wood and timber, as aforesaid, subject to such reasonable terms, conditions and regulations as to the cutting, measuring, removing and driving of the same as may from time to time be imposed by the Minister.



12. The Grantees shall not have the right to cut or remove timber of any kind from any lands while under timber license or permit from the Crown.

13. The wood and timber shall be cut upon such portions of said territory, and in such manner as the Minister may from time to time direct, and such precautions shall be taken and means employed to prevent injury or destruction by fire on said territory as said Minister may require, including payment of such annual charge for fire protection as may from time to time be fixed by the Lieutenant-Governor-in-Council.

14. No wood or timber cut on the said territory shall be exported or sold to any person or persons; but such wood or timber shall be used for the purpose of supplying the mills of the said Grantees in the Town of Kenora as aforesaid.

15. The Grantees shall reserve such quantities of newsprint paper as they may be required from time to time so to do by the Minister, for purchase by publishers within the Dominion of Canada.

16. Proper sworn returns of the quantity of wood or timber cut each season shall be made by the Grantees to the Crown, in conformity with the Crown Timber Act and Regulations thereunder, and payment shall be made for such wood and timber not later than the 1st day of October in each year, and the Crown shall have all the rights and powers in respect of enforcing such payments as are now provided in the case of timber cut under timber license.

17. The Grantees shall not, at any time or in any place, deposit, empty, run or turn into any river, stream, or other waters whatsoever, any refuse, sawdust, chemicals, or matter of any kind, which shall or may be injurious to fish life, or have the effect of destroying, harming, or driving away the fish in such river, stream, or water.

18. All water powers and privileges on said territory, and the right of the Crown to raise, hold, lower, and maintain the waters on the rivers, streams and lakes in said territory at such height and in such conditions as may be found necessary and expedient for the development of such water powers, are reserved to the Crown.

19. The Crown shall retain the right to sell, lease, locate or otherwise dispose of any lands included in the said territory on the same terms and conditions for settlement, mining, or other purposes, as ordinary Crown lands situated elsewhere, and this agreement is not to impede or retard settlement, or mining operations, and nothing herein contained shall limit or affect the right of the Department of Lands and Forests to sell, lease, locate or otherwise dispose of lands in the aforesaid territory for settlement, mining or other purposes.

20. Nothing herein contained or to be done hereunder or by virtue hereof shall entitle the Grantees to a monopoly in the use of any rivers, streams, or lakes or tributaries thereof in the said territory, but the same shall be and continue open for the use of the public in accordance with the law in that behalf, and in the event of the works of the Grantees in any way interfering with the driving of logs or timber down the said rivers, streams, or lakes or tributaries thereof, the Minister shall have full power to determine from time to time the provisions necessary to overcome such interference and thereupon the said Grantees as and when directed will make provision accordingly.

21. It is distinctly understood and agreed that nothing herein contained shall, without the consent in writing of the Minister, be deemed to confer any

right to cut or remove timber from any territory or areas while under license or permit from the Crown.

22. The Minister shall have the right to have the timber operations on the said territory inspected at any time he may deem it advisable.

If upon any such inspection, it appears and the Minister so decides, that the timber operations are carried on in such a way that any merchantable or valuable timber which should be removed, is being left or destroyed, he shall have the right to have said timber estimated and charge the same to the Grantees, who shall pay for the same, as so estimated, at the same rates of dues as if it had been actually removed by the said Grantees.

23. The cutting and removing of the timber on this territory or any part thereof shall not be deemed to have been completed until it has been declared satisfactory by the Minister.

24. The Grantees, upon entering into this Agreement, shall deposit forthwith with the Provincial Treasurer of Ontario, Two Hundred and Fifty Thousand Dollars (\$250,000.00) cash or an equal amount of Dominion of Canada bonds or Province of Ontario securities, to guarantee the erection and operation of the said mills in conformity with the said conditions, which said bonds and securities shall be forfeited to the Crown in the event of the failure of the Grantees to fulfill all or any of the conditions of this agreement. The said cash or bonds or securities shall be returned upon due performance of the conditions herein contained to the satisfaction of the Minister and the expenditure of the sums herein stipulated.

25. The Crown does not guarantee any particular quantity of wood or timber, nor undertake to do more than grant the right to cut such quantities of wood or timber as may be on the said area, subject to the reservations and conditions hereinbefore provided.

26. In the event of failure on the part of the Grantees to erect, construct, or operate the said pulp, paper or sawmills as hereinbefore agreed, or in default of the said Grantees keeping said pulp, paper and sawmills in operation after the erection thereof, or keeping the required number of persons employed as aforesaid, or upon default of compliance with any of the terms, requirements, provisions or conditions as aforesaid, the Crown may revoke the right, license or permit to cut the said forest products, and upon said revocation all rights of the Grantees under this agreement shall be and become *ipso facto* null and void, and all securities or moneys paid as a deposit or bonus herein shall be forfeited to the Crown as liquidated damages; provided that thirty days' notice in writing of intention to revoke the said right, license or permit shall be given by registered letter addressed to the Grantees at the said Town of Kenora, before any such revocation, in order that the Grantees may have an opportunity of being heard should either or any of them so desire.

27. The word "Minister" herein shall mean Minister of Lands and Forests for the Province of Ontario.

28. This agreement shall be binding upon and enure to the benefit of the Grantees, their heirs, executors, administrators, successors, and assigns. Provided, however, that this agreement and the term hereby created, shall not be assigned or transferred without the written consent of the Minister.

29. The said parties for themselves, their heirs, successors, executors, administrators, and assigns, respectively, do hereby respectively covenant and agree to the full performance on their part, respectively, of everything herein stipulated to be done.

IN WITNESS WHEREOF the said Minister of Lands and Forests for the Province of Ontario and the parties hereto of the second part, have hereunto set their hands and seals.

SIGNED, SEALED AND DELIVERED

in the presence of

(Sgd.) F. J. NIVEN.

(Sgd.) BENIAH BOWMAN.

As to the execution by the Minister of  
Lands and Forests

(Sgd.) F. J. NIVEN.

(Sgd.) EDWARD WELLINGTON  
BACKUS.

As to the execution by Edward Wellington  
Backus, The Keewatin Lumber Company,  
Ltd., and the Keewatin Power Company,  
Ltd.

(Sgd.) KEEWATIN LUMBER  
COMPANY, LTD., by E.  
W. Backus, Pres.

(Sgd.) F. J. NIVEN.

(Sgd.) KEEWATIN POWER  
COMPANY, LTD., by E.  
W. Backus, Pres.

Attest:

(Sgd.) CHAS. C. NONEY,  
Secretary, Keewatin Lumber Co., Ltd.

Attest:

(Sgd.) CHAS. C. NONEY,  
Secretary, Keewatin Power Co., Ltd.

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*Appendix No. 51.*

NIPIGON PULP AND PINE LIMIT AGREEMENT.

THIS AGREEMENT made in triplicate this 15th day of July, One Thousand and Nine Hundred and Twenty-one.

BETWEEN:

His Majesty, the King, represented by the Honourable,  
the Minister of Lands and Forests for the Province of  
Ontario, hereinafter called THE CROWN,

OF THE FIRST PART,

—and—

Provincial Paper Mills, Limited, hereinafter called THE  
GRANTEE,

OF THE SECOND PART.

WHEREAS, by advertisement duly published, the Honourable, the Minister of Lands and Forests for Ontario, called for tenders to be received by him up to and including the 29th day of December, 1920, for the right to cut pulpwood and pine timber on a certain area situated on the north side of Lake Superior, and territory adjacent thereto, in the District of Thunder Bay, hereinafter more particularly described,



AND WHEREAS on the 29th day of December, 1920, the said Minister received from the Grantee a tender for the right to cut pulpwood and pine timber on said area, which said tender has been approved and accepted,

AND WHEREAS the grant of the right to cut pulpwood and pine timber upon said area was, by said advertisement for tenders and by the tender of the said Grantee, based upon and subject to certain terms, conditions and stipulations,

AND WHEREAS this agreement is entered into for the purpose of ensuring the performance by the Grantee of the obligations contained in the said tender and acceptance thereof as hereinafter defined and of securing the Grantee the said supply of pulpwood and pine timber for the purpose of the mill or mills to be established, maintained, conducted, and carried on at a point or points within the District of Thunder Bay or some place approved by the Lieutenant-Governor-in-Council,

NOW THEREFORE, THIS INDENTURE WITNESSETH that, in consideration of the premises, it is agreed by and between the Grantee and the Crown as follows:

1. The Grantee shall, on or before two years from the date hereof, have in operation at a point or points within the District of Thunder Bay, or at the Grantee's option at some other place, approved by the Lieutenant-Governor-in-Council, a paper mill or mills with the necessary pulp mills therewith of a value of not less than \$1,500,000.00, and have in operation at some point or points as aforesaid, within one year of the date of acceptance of tender, a mill or mills of the value of not less than \$1,000,000.00; and upon and after the completion of said mills, the said Grantee, during the currency of this agreement, shall, subject as hereinafter provided, continue to operate the said mills, and shall employ and keep employed, in connection with the operation of said mills, at least 300 persons on an average for at least ten months in each and every year during the currency of this agreement.

2. Commencing with the month of January, 1925, the Grantee shall, in the month of January of each and every year during the currency of this agreement, deliver to the Minister upon such form as the Minister may direct, a statement, verified by the oath of the secretary of the Grantee, showing the persons, who, during the calendar year ending with the thirty-first day of December then next preceding, were employed by the Grantee in operating the said mills, together with such other details in connection therewith as the Minister may require.

3. The Grantee shall manufacture at said mill or mills a quality of paper equivalent to that now in use in the publication of school-books by the Department of Education of the Province of Ontario, as may from time to time be directed by the Lieutenant-Governor-in-Council, and shall supply directly or indirectly during the period covered by this agreement, such quantity of said grade of paper as shall, in the opinion of the Minister of Lands and Forests, fully satisfy the requirements of the said Department of Education at prices to be agreed on, or in default of agreement at the then market price or prices, which said market price or prices is or are to be ascertained and determined by arbitration as follows: The same shall be referred and submitted to the arbitration, determination and award of three arbitrators, one arbitrator to be nominated by the Minister, one arbitrator to be nominated by the Grantee, and the third by the two so named, or in default of those two agreeing on the third, such third arbitrator to be appointed by any judge of the Supreme Court of



Ontario. The award of such arbitrators (or any two of them) shall be final and conclusive, and there shall be no appeal therefrom and the parties hereto do mutually covenant and agree each with the other that the award to be made by the said arbitrators or any two of them, shall in all respects be well and faithfully kept and observed. The provisions of "The Arbitration Act" of Ontario, save so far as the same may be inconsistent with the provisions hereof, shall apply to said arbitration; it being understood that deliveries shall be made promptly, notwithstanding that the price may not have been agreed upon or ascertained or determined.

4. As and when required so to do by a publisher or publishers of the Province of Ontario, the Grantee shall supply to such publisher or publishers, at prices to be agreed upon by the Grantee and such publisher or publishers, paper of the quality specified in Clause 3 hereof, but so that not more than fifteen per centum of the output of said mills shall be required to be supplied under the terms of this Clause.

5. In consideration of the bonus hereinafter mentioned and of said expenditures and of the contracts and agreements entered into on the part of the Grantee, the Crown, for the said bonus and the dues hereinafter set forth and provided and subject to the terms, conditions, and regulations as to locality and manner of cutting, measuring, driving and removing same as may from time to time be imposed by the Minister and subject also as hereinafter set forth and contained, will and doth grant to the Grantee the right to cut and remove all spruce, balsam, banksian or jackpine, poplar and whitewood trees, to supply for a period of twenty-one years the said mill or mills or extensions thereof or additions thereto (provided however, that where such extensions or additions are outside the District of Thunder Bay, the same have been approved of by the Lieutenant-Governor-in-Council); and also to cut and remove all red and white pine trees from unlicensed, unoccupied, unsold and unlocated lands of the Crown in or upon the area hereinafter described as follows:

Commencing at the point in which the east limit of the Township of Nipigon intersects the north shore of Nipigon Bay of Lake Superior; thence north along the east boundary of the said township 5 miles and  $36\frac{1}{2}$  chains to the north-east angle of the township; thence east astronomically a distance of 5 miles and 30 chains more or less to a point south, astronomically, from the south-east angle of the Township of Ledger; thence north, astronomically, seven (7) miles, more or less to the south-east angle of the said Township of Ledger; thence east, astronomically, along the south boundary of the Nipigon Forest Reserve twenty-two (22) miles to the south-east angle thereof; thence north, astronomically, along the east boundary of the Nipigon Forest Reserve eight (8) miles; thence east, astronomically, a distance of twenty-eight (28) miles, more or less, to a point of intersection with the west boundary of the Pic River Pulp and Timber Limit produced north; thence south eight (8) miles, more or less, to the north-west angle of said Pic River Pulp and Timber Limit and continuing south along the west boundary of said timber limit twenty-three (23) miles, more or less, to the north shore of Lake Superior; thence westerly and north-westerly, following the shore of Lake Superior to the place of beginning, containing an area of one thousand two hundred and forty (1,240) square miles, more or less, excepting from the above described area, the right-of-way and lands of the Canadian Pacific Railway Company, and all other lands patented, leased or sold therein.

Reserving and excepting, nevertheless, from the above-described area, all lands under the water of all rivers, lakes and streams within the said described area; also all lands heretofore patented, licensed, located or applied for in respect of which such proceedings have been taken or shall hereafter be taken as in the opinion of the Minister entitles the applicant or applicants to a lease or patent for such lands, together with the right of the Crown to sell, lease, locate or otherwise dispose of any lands included in the hereinbefore described area on the same terms and conditions for settlement, mining or other purposes as ordinary Crown lands situated elsewhere.

6. The Grantee, as to the right to cut the pulpwood and pine timber on said area, as above described, shall pay a bonus of \$1.33 per cord for spruce pulpwood; a bonus of 20 cents per cord for all other pulpwood above mentioned; and a bonus of \$5.00 per thousand feet, board measure, for pine logs, and shall also pay the following Crown dues, namely: 80 cents per cord for spruce pulpwood; 40 cents per cord for all other pulpwood; \$2.50 per thousand feet, board measure, for pine logs; or such other dues as shall be fixed from time to time by the Lieutenant-Governor-in-Council.

7. It is distinctly understood that the Grantee obtains the right to cut the timber only, and has no right to the soil or use thereof, except as may be necessary for cutting and removing the wood and timber, as aforesaid, subject to such terms, conditions and regulations as to the cutting, measuring, removing and driving of the same, as may from time to time be imposed by the Minister.

8. The wood and timber shall be cut upon such portions of said territory, and in such manner as the Minister may from time to time direct, and such precautions shall be taken and means employed to prevent injury or destruction by fire on said territory as said Minister may require, including payment of such annual charge for fire protection as may from time to time be fixed by the Lieutenant-Governor-in-Council.

9. All pulpwood cut on the said territory shall be used for the supply of, and shall be manufactured at the said mills or extensions thereof or additions thereto (provided, however, that where such extensions or additions are outside the District of Thunder Bay, the same shall have been approved of by the Lieutenant-Governor-in-Council). All pine timber shall be sold subject to the manufacturing condition, that is to say, it shall be manufactured in the Dominion of Canada.

10. The Crown does not guarantee any particular quantity of wood or timber nor undertake to do more than grant the right to cut such quantities of wood or timber as may be on said area, subject to the reservations and conditions hereinbefore provided.

11. Proper sworn returns of wood and timber cut each season shall be made by the Grantee to the Crown, in conformity with the Crown Timber Act and regulations thereunder, and payment of bonus and Crown dues upon all the wood and timber cut by the Grantee, shall be made by the Grantee to the Crown forthwith upon the rendering from time to time by the Crown to the Grantee of an account thereof; and in addition to all other remedies it may have therefor, the Crown shall have all the rights and powers in respect of the enforcement of such payments and of any interest charges thereon as are now or hereafter may be provided in the case of the dues on timber cut under timber license.

12. The Minister shall have the right to inspect the timber operations on the said territory at any time he may deem it advisable or in the public interest; and if upon inspection it appears, and the Minister so decides, that the said timber operations are carried on in such a way that any merchantable or valuable timber that should be removed, is being left or destroyed, the Minister shall have the right to estimate the said timber so remaining uncut or being destroyed, and charge the same to the Grantee at, and the Grantee shall pay therefor, the same rate of dues and bonus as if the same had been actually removed by the said Grantee.

13. The cutting and removing of timber on said territory or any part thereof shall not be deemed to have been completed until it has been examined by an officer of the Crown nor until such operation shall have been declared satisfactory by the Minister.

14. The Grantee shall not, at any time or in any place, deposit, empty, run or turn into any river, stream, or other waters whatsoever, any refuse, sawdust, chemicals, or matter of any kind, which shall or may be injurious to fish life, or have the effect of destroying, harming or driving away the fish in such river, stream or water.

15. All water powers and privileges on said territory, and the right of the Crown to raise, hold, lower, and maintain the waters on the rivers, streams and lakes in said territory at such height and in such conditions as may be found necessary and expedient for the development of such water powers, are reserved to the Crown.

16. The Crown shall retain the right to sell, lease, locate or otherwise dispose of any lands included in the said territory on the same terms and conditions for settlement, mining, or other purposes as ordinary Crown lands situated elsewhere, and this agreement is not to impede or retard settlement, or mining operations, and nothing herein contained shall limit or affect the right of the Crown or its Ministers to sell, lease, locate or otherwise dispose of lands in the aforesaid territory for settlement, mining or other purposes.

17. Nothing herein contained or to be done hereunder or by virtue hereof, shall entitle the Grantee to a monopoly in the use of any rivers, streams, or lakes or tributaries thereof, in the said territory, but the same shall be and continue open for the use of the public in accordance with the law in that behalf, and in the event of the works of the Grantee in any way interfering with the driving of logs or timber down the said rivers, streams or lakes or tributaries thereof, the Minister, as well as such other lawful authority as may be constituted therefor, shall have full power to determine from time to time the provisions necessary to overcome such interference, and thereupon the said Grantee, as and when directed, will make provision accordingly.

18. It is distinctly understood and agreed that nothing herein contained shall be deemed to confer any right to cut or remove timber from any territory or area while under license or permit from the Crown.

19. The deposit of \$25,000.00, made by the Grantee with its said tender, shall be held by the Crown as security for due performance by the Grantee of its agreements contained in Clause 1 hereof, to have in operation as therein mentioned, within one year from the date of said tender, a mill or mills of the value of not less than \$1,000,000 and to have in operation as in said Clause 1 hereof mentioned, within two years from the date hereof, a mill or mills with the necessary pulp mills therewith, of the value of not less than \$1,500,000, and upon the Grantee complying to the satisfaction of the Minister, with the said provisions



of said Clause 1 hereof, the said \$25,000.00 shall be applied by the Crown and go in reduction of the first moneys payable by the Grantee for dues and bonuses hereunder, until in that way the Grantee has been given credit for the full sum of \$25,000.00.

20. Subject to the power of the Minister to waive the right of revocation, caused by any failure on the part of the Grantee, herein provided for, in the event of failure on the part of the Grantee to erect, construct, or operate the said pulp or paper mills as herein agreed, or in default of the said Grantee keeping said pulp or paper mills in operation after the erection thereof as herein agreed, or keeping the required number of persons employed as herein agreed, or upon default of compliance with any other of the terms, requirements, provisions or conditions as aforesaid, the Crown may revoke the right, license, or permit to cut the said forest products, and upon said revocation all rights of the Grantee under this agreement shall be and become *ipso facto* null and void, and all moneys paid as a deposit or bonus herein, shall be forfeited to the Crown, provided that thirty days' notice in writing of intention to revoke the said right, license, or permit shall be given by registered letter addressed to the Grantee at 54 University Avenue, Toronto, Ontario, before any such revocation, in order that the Grantee may have an opportunity of being heard should it so desire.

21. Upon all bonus and dues of all kinds on the pulpwood and timber cut under this agreement prior to the first day of May in any year during the currency of this agreement remaining unpaid on the thirtieth day of September next ensuing thereafter the Grantee, without prejudice to the power of the Crown to enforce the payment of such bonus and dues at any time the Minister may think proper, shall pay to the Crown, interest at the rate of six per cent. per annum from said thirtieth day of September; and upon all of such bonus and dues remaining unpaid on the thirty-first day of October then next ensuing, the Grantee shall pay interest at the rate of one per cent. (1%) per month from said thirty-first day of October until the same is fully paid.

22. The word "Minister" shall mean Minister of Lands and Forests for the Province of Ontario.

23. This agreement shall be binding upon and enure to the benefit of the Grantee, its successors and assigns; provided, however, that this agreement and the term created shall not be assigned or transferred without the written consent of the Minister, endorsed on said assignment or transfer.

24. The said parties, for themselves, their heirs and assigns, respectively, do hereby covenant and agree to the full performance on their part, respectively, of everything herein stipulated to be done.

IN WITNESS WHEREOF said Minister of Lands and Forests for the Province of Ontario, and the Grantee, have hereunto set their hands and seals.

SIGNED, SEALED AND DELIVERED  
in the presence of

BENIAH BOWMAN.

Witness as to execution by the Honourable,  
the Minister of Lands and Forests.  
W. C. CAIN.

PROVINCIAL PAPER MILLS,  
LIMITED, by J. H. Wel-  
don, President.

Witness as to execution by Provincial  
Paper Mills, Limited.  
MARGARET CRAINE.

By S. F. Duncan, Sec-  
retary.



*Appendix No. 52.*

## THE NAGAGAMI RIVER PULP AND TIMBER LIMIT AGREEMENT.

THIS AGREEMENT made in triplicate this fifteenth day of September, One Thousand Nine Hundred and Twenty-one.

BETWEEN:

His Majesty, the King, represented by the Honourable,  
the Minister of Lands and Forests for the Province of  
Ontario, hereinafter called THE CROWN.

OF THE FIRST PART,

—and—

The Transcontinental Development Company, Limited,  
hereinafter called THE GRANTEE,

OF THE SECOND PART.

WHEREAS, by advertisement duly published, the Honourable, the Minister of Lands and Forests for Ontario, called for tenders to be received by him up to and including the fifteenth day of June, 1921, for the right to cut pulpwood and pine timber on a certain area situated on the Nagagami River and other territory adjacent thereto in the District of Algoma, hereinafter more particularly described,

AND WHEREAS on the fifteenth day of June, 1921, the said Minister received from the Grantee the tender for the right to cut pulpwood and pine timber on said area, which said tender has been approved and accepted,

AND WHEREAS the right to cut pulpwood and pine timber on said area was, by said advertisement for tenders and by the tender of the said Grantee, based upon and subject to certain terms, conditions and stipulations,

AND WHEREAS this agreement is entered into for the purpose of ensuring the performance by the Grantee of the obligations contained in said tender and acceptance thereof as hereinafter defined, and of securing the Grantee the said supply of pulpwood and pine timber for the purpose of the mill or mills to be established, maintained, conducted and carried on at a point or points at or near the said area at some place or places approved of by the Minister,

NOW THEREFORE, THIS INDENTURE WITNESSETH that in consideration of the premises it is agreed by and between the Grantee and the Crown as follows:

1. On or before the third day of October, 1921, the Grantee shall have commenced construction work on a pulp mill within the limits of the territory hereinafter described, or at some place in the Province of Ontario approved by the Minister and will throughly equip the same so that the expenditure in connection with the erection, equipment and machinery of the said pulp mill will be at least One Million Dollars (\$1,000,000), and shall expend in connection with the erection, equipment and machinery of the said pulp mill as follows: On or before the fifteenth day of June, 1922, the sum of Two Hundred Thousand Dollars (\$200,000); between the fifteenth day of June, 1922, and the fifteenth day of June, 1923, the latter day inclusive, the sum of Three Hundred and Fifty

Thousand Dollars (\$350,000); and between the fifteenth day of June, 1923, and the fifteenth day of June, 1924, the sum of Four Hundred and Fifty Thousand Dollars (\$450,000).

2. Upon and after the completion of said pulp mill, the said Grantee, during the currency of this agreement, shall continue to operate the said pulp mill so that the daily output thereof shall, in each and every day during the currency of this agreement, be not less than 100 tons of pulp; and shall employ or keep employed, in connection with said operation of said mill, at least two hundred (200) persons on an average for at least 10 months in each and every year during the period of this agreement, and the employment of hands as aforesaid shall form part of the consideration for the price of the pulpwood and pine timber.

Commencing with the month of January, 1925, the Grantee shall, in the month of January of each and every year during the currency of this agreement, deliver to the Minister, upon such form as the Minister may direct, a statement verified by the oath of the secretary of the Grantee, showing the persons who, during the calendar year ending with the 31st day of December then next preceding, were employed by the Grantee in operating said mill, together with such other details in connection therewith as the Minister may require.

3. The Grantee shall erect a paper mill within such time and at such place as the Minister of Lands and Forests may direct, having a capacity of at least seventy-five (75) tons of paper per day; and after the erection thereof shall operate the same continuously for the period of this agreement, so that the daily output of the said mill shall not be less than fifty (50) tons of paper. The Grantee hereby agrees to reserve from time to time such quantities of newsprint paper as it may be required to do by the said Minister for the purchase by publishers within the Dominion of Canada.

4. The cutting of the said pulpwood and timber may begin as soon as, but not before, the said sum of Two Hundred Thousand Dollars (\$200,000) shall have been expended on the erection, equipment and machinery of said mills, buildings and structures.

5. In consideration of the bonus hereinafter mentioned and of the said expenditure and of the contracts and agreements entered into on the part of the Grantee, for the said bonus and the dues hereinafter set forth and provided and subject to the terms, conditions and regulations as to locality and manner of cutting, measuring, driving and removing the same as may from time to time be imposed by the Minister, and subject also as hereinafter set forth and contained, the Crown will and doth grant to the Grantee the right to cut and remove all the spruce, balsam, banksian or jack pine, poplar and whitewood trees sufficient to supply the said mill or mills to be erected, for a period of twenty-one (21) years, and also to remove all red and white pine trees from unlicensed, unoccupied, unsold and unlocated lands of the Crown in or upon the area hereinafter described as follows:

Commencing at the south-west angle of the township of Foch, thence north along the line between the districts of Algoma and Thunder Bay a distance of 54 miles, 1 chain and 26 links, to the north-west angle of the township of Boyce; thence east along the north boundaries of the townships of Boyce, Shuel, Mulloy, Fintry and Auden, a distance of 46 miles, 58 chains and 50 links, to the north-east angle of the last named township; thence south along the east boundaries of the township of Auden and Gill, 18 miles to the south-east angle of the township

of Gill; thence west along the south boundary of Gill 9 miles, 4 chains and 63 links to the south-west angle of the township; thence south along the west boundaries of Storey, Langemarck and Dowsley 26 miles, 77 chains and 58 links to the south-west angle of Dowsley; thence east along the south boundary of that township 9 miles, 1 chain and 65 links to the south-east angle thereof, thence south astronomically along the east limit of Farquhar township 9 miles and 6 chains, more or less, to the south-east angle of the township; thence west along the south boundaries of Farquhar, Haig, Wicksteed, Lessard and Foch 47 miles, 44 chains and 70 links, more or less, to the place of beginning.

Reserving and excepting nevertheless from the above-described area the right-of-way of the Canadian National Railway through the townships of Farquhar, Haig, Wicksteed, Lessard, Nagagami and Flanders, and also the right of way through the townships of Gill, McMillan, Fintry, Mulloy and Shuel, also all lands under the water of all rivers, lakes and streams within the said described area; also all lands heretofore patented, licensed, leased, located or applied for in respect of which such proceedings have been taken or shall hereafter be taken as in the opinion of the Minister of Lands and Forests entitles the applicant or applicants to a lease or patent for such lands, together with the right of the Crown to sell, lease, locate or otherwise dispose of any lands included in the hereinbefore described area on the same terms and conditions for settlement, mining or other purposes as ordinary Crown lands situated elsewhere.

6. The Grantee, as to the right to cut the pulpwood and pine timber on said area as above described, shall pay a bonus of thirty-five cents (35c) per cord for spruce pulpwood in addition to the Crown dues of eighty cents (80c) per cord and shall pay a bonus of thirty-five cents (35c) per cord for all other pulpwood above mentioned in addition to Crown dues of forty cents (40c) per cord, and shall pay a bonus of ten dollars (\$10) per thousand feet board measure for pine logs in addition to dues of two dollars and fifty cents (\$2.50) per thousand feet board measure, or such other rates of dues as may from time to time be fixed by the Lieutenant-Governor-in-Council for such pulpwood and pine timber.

7. It is distinctly understood that the Grantee obtains the right to cut the timber only and has no right to the soil or use thereof except as may be necessary for cutting and removing the wood and timber as aforesaid, subject to such terms, conditions and regulations as to the cutting, measuring, removing and driving of the same as may from time to time be imposed by the Minister.

8. The wood and timber shall be cut upon such portions of said territory and in such manner as the Minister may from time to time direct and such precautions shall be taken and means employed to prevent injury or destruction by fire on said territory as said Minister may require, including payment of such annual charge for fire protection as may from time to time be fixed by the Lieutenant-Governor-in-Council.

9. All pulpwood cut on the said territory shall be used for the supply of, and shall be manufactured at the said mills (or extensions thereof or additions thereto approved by the Minister). All pine timber shall be sold subject to the manufacturing condition, that is to say, it shall be manufactured in the Dominion of Canada.



10. The Crown does not guarantee any particular quantity of wood or timber nor undertake to more than grant the right to cut such quantities of wood or timber of the kind aforesaid as may be on the said area, subject to the reservations and conditions hereinbefore provided.

11. Proper sworn returns of wood and timber cut each season shall be made by the Grantee to the Crown in conformity with the Crown Timber Act and regulations thereunder, and payment of bonus and Crown dues upon all wood and timber cut by the Grantee shall be made by the Grantee to the Crown forthwith upon the rendering from time to time by the Crown to the Grantee of an account thereof, and in addition to all other remedies it may have therefor, the Crown shall have all the rights and powers in respect of the enforcement of such payments and of any interest charges thereon as are now or hereafter may be provided in the case of the dues on timber cut under timber license.

12. Upon all bonus and dues of all kinds on the pulpwood and timber cut under this agreement prior to the first day of May in any year during the currency of this agreement remaining unpaid on the thirtieth day of September next ensuing thereafter, the Grantee, without prejudice to the power of the Crown to enforce the payment of such bonus and dues at any time the Minister may think proper, shall pay to the Crown interest at the rate of six per cent. (6%) per annum from said thirtieth day of September, and upon all of such bonus and dues remaining unpaid on the thirty-first day of October then next ensuing, the Grantee shall pay interest at the rate of one per cent. (1%) per month from said thirty-first day of October until the same is fully paid.

13. The Minister shall have the right to inspect the timber operations on the said territory at any time he may deem it advisable or in the public interest, and if upon such inspection it appears to the Minister and the Minister so decides that the said timber operations are carried on in such a way that any merchantable or valuable timber that should be removed is being left or destroyed the said Minister shall have the right to estimate the timber so remaining uncut or being destroyed and the Grantee shall pay therefor the same rates of dues and bonus as if the same had been actually removed by the said Grantee.

14. The cutting and removing of timber on the said area or any part thereof shall not be deemed to have been completed until it has been examined by an officer of the Crown nor until such operation shall have been declared satisfactory by the said Minister.

15. The Grantee shall not at any time or at any place, deposit, empty, run or turn into any river, stream, or other waters whatsoever, any refuse, sawdust, chemicals or matter of any kind which shall or may be injurious to the fish life or have the effect of destroying, harming, or driving away the fish in such river, stream or water.

16. All water powers and privileges on said territory and the right of the Crown to raise, hold, lower, and maintain the waters on the rivers, streams, and lakes in said territory at such height and in such conditions as may be found necessary and expedient for the development of such water powers, are reserved to the Crown.

17. The Crown shall retain the right to sell, lease, locate or otherwise dispose of any lands included in the said area on the same terms and conditions for settlement, mining or other purposes as ordinary Crown lands situated elsewhere, and this agreement is not to impede or retard settlement or mining operations, and nothing herein contained shall limit or affect the right of the Crown or its Ministers to sell, lease, locate or otherwise dispose of lands in the aforesaid territory for settlement, mining or other purposes.



18. Nothing herein contained or to be done hereunder or by virtue hereof shall entitle the Grantee to a monopoly of any rivers, streams or lakes or tributaries thereof in the said territory, but the same shall be and continue open for the use of the public in accordance with the law in that behalf and in the event of the works of the Grantee in any way interfering with the driving of logs or timber down the said rivers, streams or lakes or tributaries thereof, the Minister shall have full power to determine from time to time the provisions necessary to overcome such an interference, and thereupon the said Grantee as and when directed shall make provision accordingly.

19. It is distinctly understood and agreed that nothing herein contained shall without the consent in writing of the Minister be deemed to confer any right to cut or remove any timber from any area while under license or permit from the Crown.

20. The deposit of \$50,000 made by the Grantee with the said tender shall be held by the Crown as security for the due performance by the Grantee of the provisions contained in clause numbered 1 hereof. After the said pulp mill is erected and in operation, the said deposit of \$50,000 may be applied on account of the payment of bonus as it from time to time accrues, and, subject to said application to the payment of bonus, said deposit shall remain as a guarantee for the due performance by the Grantee of all the obligations of the Grantee under this agreement. Said deposit shall be forfeited to the Crown in the event of the failure of the Grantee to fulfil all or any of the obligations or conditions of this agreement. The said deposit, or so much, if any, thereof as shall not have been applied to the payment of bonus, shall be returned to the Grantee upon due performance to the satisfaction of the Minister, of the obligations and conditions herein contained.

21. In the event of failure on the part of the Grantee to erect, construct or operate the said pulp and paper mills as hereinbefore agreed, or in default of the said Grantee keeping said pulp and paper mills in operation after the erection thereof or keeping the required number of persons employed as aforesaid, or upon default of compliance with any of the terms, requirements, provisions or conditions as aforesaid, the Crown may revoke the right, license or permit to cut the said forest products, and upon said revocation all rights of the Grantee under this agreement shall be and become ipso facto null and void, and all securities or moneys paid as deposit or bonus herein shall be forfeited to the Crown as liquidated damages, providing that thirty (30) days' notice in writing of intention to revoke the said right, license or permit shall be given, which said notice may be given by registered letter addressed to the Grantee at its head office in Ontario, before any such revocation, in order that the Grantee may have an opportunity of being heard, should it so desire.

22. The Minister shall have the power to extend, within the said period of twenty-one years, the time for the doing by the Grantee of any act required by this agreement to be done by the Grantee, and also shall have the power to waive the right of revocation caused by any failure on the part of the Grantee herein provided for.

23. The Grantee may negotiate with the Crown for the purpose of enabling the Grantee to secure an undeveloped water power to develop for the operation of the mill or mills hereinbefore mentioned.

24. The word "Minister" shall mean Minister of Lands and Forests for the Province of Ontario.

25. This Agreement shall be binding upon and enure to the benefit of the Grantee, its successors and assigns, provided, however, that this agreement and the term created shall not be assigned or transferred without the written consent of the Minister.

26. The said parties, for themselves, their successors and assigns, respectively do hereby covenant and agree to the full performance on their part respectively, of everything herein stipulated to be done.

IN WITNESS WHEREOF, said Minister of Lands and Forests for the Province of Ontario and the Grantee, have hereunto set their hands and seals.

Signed, Sealed, and Delivered  
in the Presence of:

W. C. CAIN.

E. PEARLE KING.

BENIAH BOWMAN,  
*Minister of Lands and Forests.*

TRANSCONTINENTAL DEVELOPMENT  
COMPANY, LIMITED.

W. S. MORLOCK, *President.*

SAMUEL D. FOWLER, *Secretary.*

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*Appendix No. 53.*

THE LONG LAKE PULP AND TIMBER LIMIT AGREEMENT.

THIS AGREEMENT made in triplicate this fourth day of August, One Thousand, Nine Hundred and Twenty-one,  
BETWEEN:

His Majesty the King, represented by the Honourable  
the Minister of Lands and Forests of the Province of  
Ontario, hereinafter called "THE CROWN,"

OF THE FIRST PART,

—and—

John Homer Black, of the City of Toronto, in the County  
of York and Province of Ontario, hereinafter called  
"THE GRANTEE,"

OF THE SECOND PART.

WHEREAS by advertisement duly published, the Honourable the Minister of Lands and Forests for Ontario, called for tenders to be received by him up to and including the fourth day of July, 1921, for the right to cut pulpwood and pine timber on a certain area situated in the vicinity of Long Lake, in the District of Thunder Bay, hereinafter more particularly described,

AND WHEREAS on the fourth day of July, 1921, the said Minister received from the Grantee the tender for the right to cut pulpwood and pine timber on said area, which said tender has been approved and accepted,

AND WHEREAS the right to cut pulpwood and pine timber on said area was by said advertisement for tenders and by the tender of the said Grantee based upon and subject to certain terms, conditions and stipulations,

AND WHEREAS this agreement is entered into for the purpose of ensuring the performance by the Grantee of the obligations contained in said tender and acceptance thereof as hereinafter defined, and of securing the Grantee

the said supply of pulpwood and pine timber for the purpose of the mill or mills to be established, maintained, conducted and carried on at a point or points at or near the said area at some place or places approved of by the Minister,

NOW, THEREFORE, THIS INDENTURE WITNESSETH that in consideration of the premises, it is agreed by and between the Grantee and the Crown as follows:

1. On or before the twelfth day of October, 1921, the Grantee shall have commenced construction work on a pulp mill in or near said area at some place approved by the Lieutenant-Governor-in-Council and will thoroughly equip the same so that the expenditure in connection with the erection, equipment and machinery of said pulp mill will be at least one million dollars (\$1,000,000), and shall expend in connection with the erection, equipment and machinery of said pulp mill as follows: On or before the fourth day of July, 1922, the sum of two hundred thousand dollars (\$200,000); between the fourth day of July, 1922, and the fourth day of July, 1923, the latter day inclusive, the sum of three hundred and fifty thousand dollars (\$350,000), and between the fourth day of July, 1923, and the fourth day of July, 1924, the sum of four hundred and fifty thousand dollars (\$450,000), on or before which last-mentioned date the Grantee shall have said mill equipped and in operation.

2. Upon and after the completion of said mill, said Grantee, during the currency of this agreement, shall continue to operate the said pulp mill so that the daily output thereof shall, in each and every day during the currency of this agreement, be not less than one hundred and fifty (150) tons of pulp, and shall employ or keep employed in connection with said operation of said mill at least three hundred (300) persons on an average for at least ten (10) months in each and every year during the period of this agreement, and the employment of said three hundred (300) persons as aforesaid shall form part of the consideration for the price of the pulpwood and pine timber.

Commencing with the month of January, 1925, the Grantee shall, in the month of January of each and every year during the currency of this agreement, deliver to the Minister upon such form as the Minister may direct, a statement, verified by the oath of the secretary of the Grantee, showing the persons who, during the calendar year ending with the thirty-first day of December then next preceding, were employed by the Grantee in operating the said mill, together with such other details in connection therewith as the Minister may require.

3. The Grantee shall with all convenient despatch proceed to construct a paper mill or mills in or near the said area at such place as the Minister may direct, which said paper mill or mills shall be of the capacity of at least one hundred (100) tons of paper per day and shall have the same in operation on or before the fourth day of July, 1925, and on and after the completion of said paper mill or mills, the said Grantee during the currency of this agreement shall continue to operate said mill or mills continuously so that the daily output thereof shall not be less than 75 tons of paper. The Grantee hereby agrees to reserve from time to time, such quantities of newsprint paper as he may be required to do by the Minister for purchase by publishers within the Dominion of Canada.

4. The cutting of the said pulpwood and timber may begin as soon as but not before the said sum of two hundred thousand dollars (\$200,000) shall have been expended on the erection, equipment and machinery of said mills, buildings and structures.



5. In consideration of the bonus hereinafter mentioned, and of the said expenditure and of the contracts and agreements entered into on the part of the Grantee, for the said bonus and the dues hereinafter set forth and provided, and subject to the terms, conditions and regulations as to locality and manner of cutting, measuring, driving and removing the same as may from time to time be imposed by the Minister, and subject also as hereinafter set forth and contained; the Crown will and doth grant to the Grantee the right to cut and remove all the spruce, balsam, banksian or jack pine, poplar and whitewood trees sufficient to supply the said mill or mills to be erected for a period of twenty-one (21) years from the date hereof, and also to remove all red and white pine trees from unlicensed, unoccupied, unsold and unlocated lands of the Crown in or upon the area hereinafter described, as follows:

Commencing at a point in the north boundary of the Nipigon Pulp and Timber Limit at the distance of 12 miles east from the east boundary of the Nipigon Forest Reserve; thence north astronomically 68 miles, more or less, to the southerly limit of the right-of-way of the Canadian National Railway (National Transcontinental), thence easterly along the southerly limit of the said right-of-way 66 miles, more or less, to the north boundary of the township of Barlow; thence continuing easterly along the said limit of said right-of-way through the townships of Barlow, Selwyn and Henderson 25  $\frac{9}{10}$  miles, more or less, to the east boundary of the last named township; thence south along the east boundaries of the townships of Henderson and Bell, 13 miles more or less, to the south-east angle of Bell; thence west along the south boundaries of the townships of Bell, Low, Klotz, Fernow and O'Meara, 45 miles more or less, to the south-west angle of O'Meara, thence south astronomically 24 miles; thence west astronomically 16 miles; thence south astronomically 16 miles more or less, to the easterly prolongation of the north boundary of the Nipigon Pulp and Timber Limit; thence west astronomically along the said line 30 miles, more or less, to the place of beginning.

Reserving and excepting therefrom the right of way of the Canadian National Railway (Canadian Northern) and also all Indian Reserves, and all lands under the water of all rivers, lakes and streams within the said described area; also all lands heretofore patented, licensed, leased, located or applied for in respect of which such proceedings have been taken or shall hereafter be taken as in the opinion of the Minister of Lands and Forests entitled the applicant or applicants to a lease or patent for such lands, together with the right of the Crown to sell, lease, locate or otherwise dispose of any lands included in the hereinbefore described area on the same terms and conditions for settlement, mining or other purposes as ordinary Crown lands situated elsewhere.

6. The Grantee as to the right to cut the pulpwood and pine timber on said area as above described shall pay a bonus of forty-nine cents (49c) per cord for spruce pulpwood in addition to the Crown dues of eighty cents (80c) per cord and shall pay a bonus of thirty-eight cents (38c) per cord for all other pulpwood above mentioned, in addition to Crown dues of forty cents (40c) per cord, and shall pay a bonus of ten dollars (\$10) per thousand feet, board measure for pine logs in addition to dues of two dollars and fifty cents (\$2.50) per thousand feet, board measure, or such other rates of dues as may from time



to time be fixed by the Lieutenant-Governor-in-Council for such pulpwood and pine timber.

7. It is distinctly understood that the Grantee obtains the right to cut the timber only and has no right to the soil or use thereof except as may be necessary for cutting and removing the wood and timber as aforesaid, subject to such terms, conditions and regulations as to the cutting, measuring, removing and driving of the same as may from time to time be imposed by the Minister.

8. The wood and timber shall be cut upon such portions of said territory and in such manner as the Minister may from time to time direct and such precautions shall be taken and means employed to prevent injury or destruction by fire on said territory as said Minister may require, including payment of such annual charge for fire protection as from time to time may be fixed by the Lieutenant-Governor-in-Council.

9. All pulpwood cut on the said territory shall be used for the supply of, and shall be manufactured at the said mills (or extensions thereof or additions thereto approved of by the Lieutenant-Governor-in-Council). All pine timber shall be sold subject to the manufacturing condition, that is to say, it shall be manufactured in the Dominion of Canada.

10. The Crown does not guarantee any particular quantity of wood or timber nor undertake to do more than grant the right to cut such quantities of wood or timber of the kind aforesaid as may be on the said area, subject to the reservations and conditions hereinbefore provided.

11. Proper sworn returns of wood and timber cut each season shall be made by the Grantee to the Crown in conformity with the Crown Timber Act and regulations thereunder, and payment of bonus and Crown dues upon all the wood and timber cut by the Grantee shall be made by the Grantee to the Crown forthwith upon the rendering from time to time by the Crown to the Grantee of an account thereof, and in addition to all other remedies it may have therefor, the Crown shall have all the rights and powers in respect of the enforcement of such payments and of any interest charges thereon as are now or hereafter may be provided in the case of the dues on timber cut under timber license.

12. Upon all bonus and dues of all kinds on the pulpwood and timber cut under this agreement prior to the first day of May in any year during the currency of this agreement remaining unpaid on the thirtieth day of September next ensuing thereafter, the Grantee, without prejudice to the power of the Crown to enforce the payment of such bonus and dues at any time the Minister may think proper, shall pay to the Crown interest at the rate of six per cent. (6%) per annum from said thirtieth day of September, and upon all of such bonus and dues remaining unpaid on the thirty-first day of October then next ensuing, the Grantee shall pay interest at the rate of one per cent. (1%) per month from said thirty-first day of October until the same is fully paid.

13. The Minister shall have the right to inspect the timber operations on the said territory at any time he may deem it advisable or in the public interest, and if upon such inspection it appears to the Minister and the Minister so decides that the said timber operations are carried on in such a way that any merchantable or valuable timber that should be removed is being left or destroyed, the said Minister shall have the right to estimate the timber so remaining uncut or being destroyed and the Grantee shall pay therefor the same rates of dues and bonus as if the same had been actually removed by the said Grantee.

14. The cutting and removing of timber in the said area or any part thereof shall not be deemed to have been completed until it has been examined by an officer of the Crown, nor until such operation shall have been declared satisfactory by the said Minister.

15. The Grantee shall not at any time or at any place deposit, empty, run or turn into any river, stream, or other waters whatsoever, any refuse, sawdust, chemicals or matter of any kind which shall or may be injurious to fish life or have the effect of destroying, harming, or driving away the fish in such river, stream or water.

16. All water powers and privileges on said territory and the right of the Crown to raise, hold, lower and maintain the waters on the rivers, streams and lakes in said territory at such height and in such conditions as may be found necessary and expedient for the development of such water power, are reserved to the Crown.

17. The Crown shall retain the right to sell, lease, locate or otherwise dispose of any lands included in the said area on the same terms and conditions for settlement, mining or other purposes as ordinary Crown lands situated elsewhere, and this agreement is not to impede or retard settlement or mining operations, and nothing herein contained shall limit or affect the right of the Crown or its Ministers to sell, lease, locate or otherwise dispose of lands in the aforesaid territory for settlement, mining or other purposes.

18. Nothing herein contained or to be done hereunder or by virtue hereof, shall entitle the Grantee to a monopoly of any rivers, streams or lakes, or tributaries thereof in the said territory, but the same shall be and continue open for the use of the public in accordance with the law in that behalf, and in the event of the works of the Grantee in any way interfering with the driving of logs or timber down the said rivers, streams, or lakes, or tributaries thereof, the Minister shall have full power to determine from time to time the provisions necessary to overcome such an interference, and thereupon the said Grantee as and when directed shall make provision accordingly.

19. It is distinctly understood and agreed that nothing herein contained shall, without the consent in writing of the Minister, be deemed to confer any right to cut or remove any timber from any area while under license or permit from the Crown.

20. The sum of fifty thousand dollars (\$50,000) deposited by the Grantee with its tender for the above area shall remain on deposit to guarantee the due performance by the Grantee of all the obligations of the Grantee under this agreement, which said deposit shall be forfeited to the Crown in the event of the failure of the Grantee to fulfil all or any of the obligations or conditions of this agreement. The said deposit shall be returned upon due performance of the obligations and conditions herein contained to the satisfaction of the Minister.

21. In the event of failure on the part of the Grantee to erect, construct or operate the said pulp or paper mills as herein agreed or in default of the said Grantee keeping said pulp or paper mills in operation after the erection thereof as herein agreed, or keeping the required number of persons employed as herein agreed, or upon default of compliance with any other of the terms, requirements provisions, or conditions as aforesaid, the Crown may revoke the right, license or permit to cut the said forest products, and upon said revocation all rights of the Grantee under this agreement shall be and become ipso facto null and void, and all moneys paid as a deposit, or bonus herein, shall be forfeited to the Crown, provided that thirty days' notice in writing of intention to revoke the said right

license or permit shall be given by registered letter addressed to the Grantee at the City of Toronto, in the County of York, before any such revocation, in order that the Grantee may have an opportunity of being heard should it so desire.

22. The word "Minister" shall mean Minister of Lands and Forests for the Province of Ontario.

23. This agreement shall be binding upon and enure to the benefit of the Grantee, its successors and assigns, provided, however, that this agreement and the term created shall not be assigned or transferred without the written consent of the Minister.

24. The said parties, for themselves, their heirs and assigns, respectively do hereby covenant and agree to the full performance on their part respectively, of everything herein stipulated to be done.

25. IN WITNESS WHEREOF, said Minister of Lands and Forests for the Province of Ontario, and the Grantee, have hereunto set their hands and seals.

Signed, Sealed and Delivered  
in the presence of

(Signed) W. C. CAIN.

(Signed) BENIAH BOWMAN,  
*Minister of Lands and Forests.*

(Signed) J. H. BLACK.

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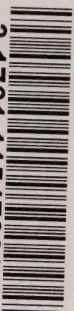
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